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Bee Culture

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VOL. XL. JULY 15, 1912, NO. 14.



ROOT'S BEEKEEPERS SUPPLIES



You may have a catalog of supplies; but if you haven't ours for 1912 you have missed something really worth while, and should get one at once. It is the largest and most complete ever published—more than a mere price list of supplies—a book that every beekeeper can read with pleasure and profit. Beginners will find answers to many perplexing questions, and advanced beekeepers timely suggestions that will save them money. Old customers are writing us frequently letters like the following:

Your catalog for 1912, designated ROOT'S BEEKEEPERS' SUPPLIES, is received, and I certainly thank you for this book. I have had your catalog on my desk for years, and have used Root's supplies all along. I note the enlargement and improvement in your new catalog, and notice many things I expect to add to my apiary.
C. W. Cox.
Crystal City, Texas.

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we can supply you, and, of course, there is no question about the quality of our goods. The name "Root" in connection with bee-supplies means the best of every thing in this line, and the best is always the cheapest, as our customers will testify. If you have never used our supplies you should make a trial of them this season. Once used, we are sure you will want no other.

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O. C. MILLS, Barton Ldg., Vt.

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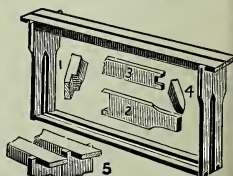
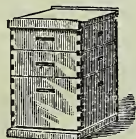
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NO. 14

Editorial

FOUL-BROOD INSPECTION FOR IOWA.

MR. FRANK C. PELLETT, Atlantic, Ia., is now State Inspector of Apiaries for that State. Mr. Pellett will be glad to receive correspondence from those who can advise him with reference to bee diseases in his State.

CLEANING SECOND-HAND SQUARE CANS.

In our Heads of Grain department, page 553 of this issue, will be found an item from Major Shallard, of Australia, on how to clean second-hand kerosene-cans so that they may be used for honey. The method described by Mr. Shallard, it would seem, would do the work most thoroughly; and if the cans are not damaged nor rusted they would be practically as good as new.

THE FOUL-BROOD INSPECTOR FOR TENNESSEE.

ANNOUNCEMENT has come to us that Dr. J. S. Ward has been appointed State Inspector of Apiaries in Tennessee, with headquarters at Nashville, to fill the vacancy made by the resignation of J. M. Buchanan, of Franklin. Dr. Ward asks the co-operation of the beekeepers of Tennessee in protecting the honey industry, and especially solicits correspondence as to where disease may be found.

BEEKEEPING IN COLORADO.

The reader's attention is directed to a very interesting article in this issue by Dr. E. F. Phillips, of the Bureau of Entomology, Washington, D. C., on beekeeping in Colorado. Eastern beekeepers will be particularly interested, because the methods they use have to be modified to fit the peculiar conditions that exist in those irrigated and elevated regions. An altitude of a mile, and no rains to speak of, and a sole dependence on melted snow from the mountains to water plant life, make it necessary for the beekeeper as well as the rancher to work on a slightly different plan from that used in other territory.

BUSY DAYS FOR THE EDITORIAL FORCE; CARNIOLANS.

THESE have been busy days for the editorial force. The unexpected rush of honey, and swarming, have made it necessary for us to go out into the field and help out the boys. For example, we have had some experience in shinning up trees forty or fifty feet high after swarms—an experience that will not be repeated next year if we know ourselves. Say! those Carniolans, when they get on the swarming rampage, violate all rules—abscond without queens, come out at any time of day, stay in the air for hours, and swarm when queens are caged in the hive. They are excellent bees to breed up, and for extracted honey, but no good for comb honey. Fortunately for us, we have only one yard of them.

MOVING BEES WITHOUT SCREENING; AUTO-MOBILE WAGONS.

WE would call special attention to the article by Geo. J. Van de Vord in this issue on the subject of moving colonies of bees without screening them in the hives. This saves a lot of preliminary work, and effectually eliminates the danger of smothering bees in transit. If an auto wagon is used, there can be no bad spills from stings as sometimes occurs when horses are used.

Auto wagons are now becoming so cheap that the modern beekeeper of fair mechanical skill with out-apiaries can not afford to be without one. The out-apiary scheme requires quick means of reaching yards with loads of empty and filled supers, and the same wagon can be used for carrying the whole extracting-outfit and a force of men to take care of the honey, extract it, and carry it back home to a place of safe storage, away from robbers of the bee kind and robbers of mankind.

J. E. HAND ON THE SICK LIST.

MR. J. E. HAND, producer of fancy comb honey, and successful user of the shallow divisible-brood-chamber hive, inventor of

the Hand switch-lever bottom board for controlling swarming, author of "Beekeeping by Twentieth-century Methods" (published by the A. I. Root Co., 50 cents), a chicken fancier, as well as a honey-producer, has had a relapse of his old nervous trouble, and it is feared he will never recover sufficiently to be able to take up his business again.

For two or three years back he has been quite extensively engaged in the rearing of queen-bees of a high class; and our readers will remember his discovery of feeding bees a thin sugar syrup, made of nine parts of water and one of sugar, in outdoor feeders in such away as to eliminate all robbing during a dearth of honey, and yet keep queen-rearing going on at full headway. Mr. Hand is an original genius—keen, alert; and his many friends will be sorry to know of the infliction that has been visited on him. He is now in the hospital for treatment where it is hoped that he may be restored to his former health.

Mrs. Hand writes that all money sent for queens that her husband could not send has been returned. There will be no use, of course, in sending in any more orders; and if there is any of his correspondence that has been neglected by Mr. Hand, we feel sure that Mrs. Hand will be able to take the matter up. Address her at Birmingham, Erie Co., Ohio.

HONEY-CROP REPORTS UP TO JULY 9.

WE are having a remarkable flow of clover honey in Northern Ohio; and if the season were as good all over the United States as we are having here, and there were enough bees to gather it, the honey market would be glutted in short order. We have had practically four weeks of clover; and it looks now, July 9, as if we might have two more weeks of it. Bees are booming at all our outyards; and swarming—it took us so completely by surprise that we were unprepared for it. The region around Zanesville, O., is likewise reporting a remarkable yield from clover.

Apparently the yield of clover honey has not been as good elsewhere in the United States; but from reports that are now in, there will be far more clover honey produced this year than for some time past. Clover seems to be yielding best in the central and eastern States—more particularly the central. Indiana and Illinois, however, have so far not made much of a showing. Some parts of Canada will have a large yield, and other parts only a fair one.

There have been several good reports from the East, particularly around New York, Philadelphia, and Washington. Excellent

yields have been reported in Maryland, some parts of West Virginia, Kentucky, and Alabama; Missouri poor and Kansas good. Reports from the New England States are scattering. So far no large yield has been reported. There will be some clover honey in Michigan, Minnesota, and Wisconsin, with a little basswood.

Colorado will have a fair yield, probably.

Reports are unfavorable from California. Some orange has been produced, but there appears to be but very little sage. Winter losses have been reported in some of the other western irrigation States; and while alfalfa will furnish nectar as usual, there will be fewer bees to gather it.

Prospects in Pecos Valley, New Mexico, are poor.

In Texas the season has been poor, and the same is true of Florida. Some of the other southern States report a very good yield.

Taking it all in all, it is our opinion that there will be a better crop of Northern white-clover honey harvested than usual; a fair crop of alfalfa, and a light crop of sage. Prices in the East, on account of clover, may be a little easier than last year; but for the present they should hold about the same, for the reason that no accurate estimate of the crop can be given as yet.

In the meantime, we request our subscribers and others to continue sending in reports of what the season has been. Make the reports short—not more than two or three sentences.

DENATURED ALCOHOL FOR REMOVING PROPOLIS FROM SECTIONS; ELIMINATING GLASS FROM SHIPPING CASES.

S. N. HATHAWAY, page 454 of this issue, recommends removing propolis with denatured alcohol, which is now comparatively cheap. We see no reason why the scheme should not work.

We wish to call particular attention to what our correspondent has to say on the subject of using no glass in shipping cases. While we endorse what he says in a footnote, we feel that the matter is so important that we desire to give it further reinforcement here.

The use of glass very materially weakens a shipping case. The wider the glass, the frailer the case. A weak or wobbly case breaks a good many sections.

The front row of sections as seen through the glass very often, and we may say generally, does not tell the truth as to the kind of combs behind them. It is not necessary any more to have glass in the front of the

case to indicate the fragile character of the goods it covers. The old theory was that it would warn the freight and express handlers to be careful; but experience for many years back shows that such warning seldom is of any avail. In fact, the railroad companies are now discriminating against glass in shipping cases. All comb honey nowadays is or should be shipped in carriers. When so packed, the glass will seldom show, even if used. Reliance must rather be placed on large printed labels on the carriers to indicate the character of the goods; and the safety of the comb honey lies really in the fact that the carrier is too heavy to be dumped or thrown. The straw cushion used in carriers will take care of what little jars the sections may receive.

The only argument that can be advanced for glass in shipping cases is for retail display purposes; but as we have argued time and time again, sections can be shown off to better advantage in a regular showcase than between two bars of wood of a soiled, unpainted wooden container.

We believe the time is not far distant when producers of comb honey, and buyers alike, will demand the elimination of glass entirely, not only as an unnecessary expense but as a positive detriment. If the new grading rules adopted by the Colorado Honey-producers' Association, as given in our last issue, should be generally adopted, and if buyers would refuse to take comb honey, except in carriers, in less than ear lots, and discriminate against cases with glass, the comb-honey business would soon be restored to its former standing. Dealers furnish cases made for glass for no other reason than that old usage sanctions them. It is high time that we pack our comb honey in the strongest cases we can make, weight and price considered. Certainly we ought to make such containers as strong as those for bottled goods that are far less fragile.

MANAGER RAUCHFUSS' STATEMENT CONCERNING THE NEW COLORADO GRADING RULES.

We sent Mr. Frank Rauchfuss, Manager of the Colorado Honey-producers' Association, an advance copy of our editorial on Colorado's new comb-honey grading rules. Mr. R., we understand, had much to do with the framing of the new rules. His comments on our editorial will, therefore, be read with interest.

Mr. Ernest R. Root:—Your copy of the 1st inst. is at hand, also advance copy of the article in GLEANINGS relating to grading. I am well pleased with it, and hope your suggestion of having a meeting of honey-shippers and carload handlers of honey, at Chicago or some other place, some time in the near future, will be carried out.

In your editorial you say, "Another very impor-

tant suggestion is that for scraping the section." It should be incorporated in the rules, for it is very important. In prefacing the whole article you say, "Not only the rules but the general suggestions are worthy of careful reading." We should like to call your attention to the fact that we are not making suggestions as to how honey should be graded and packed, but give instructions, and these must be carried out if the honey is to be accepted. There is one slight omission in the description of the marking of "Choice" honey. It should read, "Choice must be marked — (dash) in hand-holes," and directions for extracted-honey producers should read, "Adopt the plan of marking," instead of marketing, "each extracting."

In adopting these rules we have held to the view that comb honey is an article that sells principally by appearance; therefore the question of color and finish has been given most prominence. For instance, in our fancy white you will note that honey, comb, and cappings must be white; in the No. 1 it says, "honey, white or very light amber, but comb and cappings from white to slightly off color." While I realize that this term, "slightly off color," is somewhat vague, I have not been able to run across any one who could offer a better description. You know that here in Colorado, especially on the western slope, we have quite a little honey that is of a pinkish order, of very good flavor and body, and very often has cappings that are nice and white except for a little discoloration at the bottom. We realize that such honey as that should go into No. 1 grade, especially if the qualifications of weight are carefully observed as they should be. Now, in the choice grade we have the following description as to color: "white to amber, but not dark." This is another rather vague way of explaining things, but is the best we could do; and when it comes to explaining these matters, the best way to do is to have grading demonstrations. We have had several of them at our annual meetings, and they have been well received by the members. In the grading instructions you will find one clause where it says, "The front sections of honey in a case must be alike in color and finish, and be a true representation of the contents." Now, this disposes of the whole matter where more than one shade of color are permitted in the same grade; because if this instruction is carried out, honey of one shade and finish will be found only in the same case; and the dealer buying the honey can govern himself accordingly. As you well know, in every city there are people who prefer dark-capped honey before the white-capped, although they are in the minority; and by this kind of grading they can easily be accommodated. You will note that no provision has been made for honey where more than fifty cells are uncapped. This has met with some criticism by our people on the western slope. They contend that sections weighing probably 14 ounces, but capped over three-fourths on one side and one-fourth on the other, are good salable sections. However, my experience in the comb-honey business has been otherwise. While there are isolated cases where such honey is wanted, they are not sufficiently numerous to give them any consideration in grading rules. Such honey can usually be disposed of to fair advantage in the home market; or if this is not the case they could be extracted.

THE COLORADO HONEY-PRODUCERS' ASSOCIATION,
FRANK RAUCHFUSS, Manager.
Denver, Colo., July 3.

We are glad to know that the matter is not so much optional as mandatory. Good!

GLEANINGS will be glad to assist in any movement looking toward a more general adoption of these excellent grading rules. We have already written to Secretary Tyrrell, of the National Beekeepers' Association, asking him if it would be possible for him to arrange for a meeting of producers and buyers at some central point, say Chicago, with the view of adopting the Colorado rules as they stand, or making such modifications as might seem wise on the part of all those concerned.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

IT IS FOUND that invertin, which causes the inversion of sugar, is present not only in the saliva of bees, but also in pollen.—*Schweiz. Bztg.*, 512.

WESLEY FOSTER, you ask, p. 330, what a beekeeper would gain over express charges by a parcels post limited to 11 pounds at 12 cents a pound. On a 1-lb. package he would gain 13 to 18 cents, according to distance; on a 2-lb. package he would gain 6 to 11 cents.

C. CALVERT, you seem to think, p. 349, that our eight-frame hives are too small, and that a hive with ten Standard frames is the most useful type. But the frames in our eight-frame hives are $17\frac{5}{8} \times 9\frac{1}{8}$, and your Standard frames are $14 \times 8\frac{1}{2}$; so our eight-frame hives really contain $96\frac{5}{8}$ square inches more frame surface than your ten-frame hives!

YOU ASK, Mr. Editor, what's the matter with manilla hive-tags? Curl up. Glad to have you say they work well at Medina. Perhaps I didn't fasten them on right. Have just ordered another set to try again. How do you fasten them on the hive? [Your unsatisfactory experience with the first set of manilla tags was doubtless due to the fact that we first soaked the tags in linseed oil after they were printed. Like yourself, we found them unsatisfactory. Finally an enterprising Yankee suggested that we soak them in boiling-hot paraffine. Tags so treated stand the weather very much better. But even these will discolor in time; but we have some that have been in use for five years, and we venture to say they will show the numbers fully as well as any metal tags with the figures painted in black. They are so cheap that they can be replaced for less money then it will take to fix up metal tags.—ED.]

THIS YEAR has been very unusual. Last winter was the killingest winter I ever knew. A good many trees and bushes were killed root and branch (nearly all my roses gone), and much of the grass and clover killed. Loss in some apiaries 75 per cent; in others, 100 per cent. Fed up to June 22. Then a lightning change; clover-bloom seemed to jump out of the ground (increasing ever since), and supers were put on June 24. Within 24 hours honey was in many supers. The flow began too late for a crop, but—I don't know. [We have had four weeks of honey flow, and white clover

seems to be at its height. To-day, July 5, the basswoods are just opening up. If every locality had a flow like the one we are having here, it would be the greatest honey year on record. We never had so much swarming in all our experience, nor so much honey from colonies so weak that they would be supposed to be doing well if they even filled their combs. As it is, they are filling the combs twice over, and the queens would be honey-bound unless we extracted.—ED.]

DESIRING data as to distance required for the isolation of a mating station, Frank-Kleist marked 70 or 80 field bees with red or yellow color early in the season when forage was scarce. In the next fortnight he made frequent visits to a field of *Erica carnea* $2\frac{1}{2}$ miles away, and always found his marked bees there. He repeated the experiment when pasturage became plentiful, and never found them further than a mile away. A third experiment, after pasturage was scarce, showed his marked bees again $2\frac{1}{2}$ miles away. But at this same time a spot of good pasturage at a much shorter distance was left unvisited by the bees, because to reach it they must pass over a wooded hill.—*Leipzg. Bztg.*, 66. This looks as if bees do not from preference forage more than a mile from home. [This conforms exactly to our own experience. We have demonstrated over and over again at our outyards that when bees can get plenty of nectar within a mile or a mile and a half, they will not go further; and why should they? Usually a clover flow will give bees all they can do within a radius of a mile and a half; and basswoods will take care of twice the number of colonies within the same radius. Or, to put it another way, the same number of bees would not require more than half the radius needed by clover. But when forage close at hand is scarce, bees will go two and a half and even three miles, providing the flight is over a level plain without obstruction. A piece of wooded land will often prevent bees from going even a quarter of mile to a fine field of alsike—that is, assuming that the woods are between the bees and the field. When we furnish alsike at half price to beekeepers within a mile of our apiaries we make sure that the field to be sown is not the other side of a piece of woods nor high hills. Taking it all in all, our experience exactly coincides with that of Mr. Frank-Kleist.—ED.]

SIFTINGS

J. E. CRANE, Middlebury, Vt.

Mr. Holtermann's suggestions on page 228, April 15, as to using wires in brood foundation is to the point when he says the wire should be placed where there is the most sag in the combs at the top. It is rare indeed that we find cells out of shape for more than two inches below the top-bar, whether there are wires below this point or not.

* * *

Some very wise person has remarked that you can't tell by the looks of a toad how far it will jump, and it is true. The same might be said of many inventions relating to bee-keeping. You can't tell by the looks of them how far they will jump nor whether they will prove to be of permanent value. There is Hand's bottom-board that I saw in actual use at Prof. E. L. Baldwin's, at De-land, Fla. Prof. Baldwin was much pleased with it, and it seemed as though it might prove to be a success. Certainly the bees of that hive were working with an energy unsurpassed by any other colony in the yard.

* * *

Railroads get their share of abuse for their heavy freight rates and methods of business; but have we stopped to realize their immense value in transporting products that otherwise would be of little value, and conferring a benefit on both the producer and consumer? I am reminded of this as I see the enormous amounts of fruits and vegetables shipped from the South during the winter months to the cold North that otherwise would have to go without them. Picking up a can of cream with which to flavor my coffee at the dinner-table to-day in southern Florida, I noticed it was put up in the opposite corner of the country, Seattle, in the State of Washington, four thousand miles away; and yet it was as sweet and delicate in flavor as if it had come from a creamery this very morning. Great as are the problems and abuses of transportation, the blessings are even greater.

* * *

On page 190, April 1, Wesley Foster makes out a strong case against our postal laws and a pretty bad one against our express companies. I believe, however, some allowance should be made for the size of the United States when we consider the immense distances packages have to be carried in this country as compared with

the distance covered by most of the nations of Europe. For instance, the area of the United States, not including outlying portions, is not far from nineteen times that of Germany or France, while the rate on parcels is only twelve times as great. Switzerland, with its one cent a pound, is only about one third the size of the State of New York. So far as the express companies are concerned it looks as though they were willing to take all they can get; and their avaricious nature should be curbed by some vigorous legislation that would compel them to do to others as they would like to be treated themselves—38-per-cent dividends!

* * *

PUTTING THE BEES THAT SWARM BACK WITH THE PARENT COLONY.

Mr. Doolittle, p. 227, Apr. 15, tells how to increase and secure a crop of honey, and, incidentally, how *not* to increase too much when relying on natural swarming. In caring for a yard of bees for Mr. O. O. Poppleton during a large part of last March, not wanting much increase, I hived the new swarm in a hive, and left it for a few days until it had gotten over its swarming fever, and then dumped the bees back into their own hives, or some other that had recently swarmed. This seemed to work very satisfactorily. Scarcely a colony so treated swarmed again.

* * *

THE EFFECT OF TOO MUCH COLD WIND.

Page 191, April 1, J. L. Byer gives some interesting notes on the wintering of bees and the effect of shade and wind. In looking over a yard recently for foul brood the proprietor said his bees had wintered very badly. Coming to one side of his yard, "These," said he, "are almost all dead," and I found them so, as not one in five was alive. In another part of the yard he said, "Now, these are pretty fair," and, sure enough, they were almost all alive. What made the difference when the season last year was the same for all? Just this: Those that were pretty fair were to the south and leeward side of his honey-house, while those that were nearly all dead were at one side where the wind swept around the house and blew even harder than in the open fields; for if we block a current of air or water it will move faster around the obstruction than where there is none. I like a little circulation of air, for it keeps the temperature more even—but not too much.

Beekeeping in the Southwest

LOUIS SCHOLL, New Braunfels, Texas.

THE HONEY-CROP REPORTS.

The old saying, "There's many a slip 'twixt cup and lip," has once more shown itself only too true when applied to this year's honey season in the Lone Star State. A little over two months ago I reported most favorably on prospects for a bountiful honey harvest. Since then the tide has changed, and the change is so pronounced that it means that Texas will have the shortest crop that we have ever experienced. Nine weeks ago there was every indication of a bountiful honey crop. Vegetation and all kinds of nectar-yielding blossoms were most plentiful. The bees were in excellent condition, and beekeepers everywhere were jubilant over the fine prospects. As it is now, southwest Texas, where the bulk of the honey of this State is produced, has not had a crop. The main flows in the spring, guajilla and catslaw, and also the mesquite, did not come out as usual; and the horsemint, while abundant in most localities, did not yield nectar. This is attributed largely to the unusual season—the long-drawn-out winter, followed by a late spring, and too cool nights that prevailed long after spring finally opened. Although there was a profusion of bloom, nectar was very scarce, even when the bees were not hindered by unfavorable weather from going to the fields.

In a nutshell, the weather conditions were not favorable to the proper development of the blossoming of the honey-yielding plants, and the atmospheric conditions were not conducive to the secretion of nectar in those blossoms that did exist. There is still some hope of the mesquite yielding a summer flow, especially in those regions where recent rains have been plentiful. Whether this will materialize is hard to tell as yet. The State, outside of southwest Texas, is entirely different. Here the honey crops come somewhat later, as a rule. Sometimes early crops in April are obtained also, where mesquite prevails.

In eastern Texas basswood abounds in several localities, and this year it yielded an abundance of honey in May.

All beekeepers who are located in the cotton belt of central Texas and further north are figuring on a good yield from cotton. Recent heavy rains have made these prospects most excellent. The bees have just begun on the cotton; and as it is coming into bloom rapidly, a harvest from this source ought to be assured. The cotton honey-flows are long and slow, and usually

last until frost if weather conditions are favorable. With too dry weather in the fall the cotton plants usually cease to blossom, and also shed their foliage, so there is no nectar to be had, and the flow is cut short.

* * *

BULK-COMB-HONEY PRODUCTION.

On several occasions I have avoided writing on the above subject mainly because I do not like to harp on one theme continually. The inquiries have become so frequent that it seems as though the subject might be of general as well as individual interest. What is said about bulk-comb-honey production in this department is partly in reply to letters which can not be answered promptly at this season of the year, and partly because there is a somewhat extended desire for information on bulk-comb-honey production, as indicated by the numerous letters from so many different States. That bulk comb honey has found favor among beekeepers in other States than in the South is indicated by numerous communications to this effect. It is indeed gratifying to note this, since I have always believed and have contended that its more extended production would mean a better distribution and a better price for honey.

There is as yet a very wide opinion as to the best way of producing this honey, and a still greater difference as to the way of marketing it and putting it up to the best advantage, and most economically for the trade. It seems as though every producer has a different way of marketing this product. The sooner a uniform method of packing and marketing can be established, the better. Since the pure-food laws came into effect, the question of the proper weight of the various Texas standard packages has arisen, and a movement to regulate this is on foot now. As soon as this is settled, it will mean that all bulk comb honey in Texas will be put up one way, and will be known to producer and buyer alike.

The question that arises is whether the standard packages used in Texas would be the suitable ones for other parts of the country. I see no reason why they should not be, especially since they are already of standard manufacture. It is only necessary to try these out to ascertain their adaptability; and for the information of those who desire it, a full description of the various kinds and sizes we use will be given in a subsequent issue of this journal.

BEEKEEPING IN CALIFORNIA

P. C. CHADWICK, Redlands, Cal.

I wonder what California would do with her honey if all conditions should be just right once. The crop would be enormous.

* * *

From letters received I am led to the conclusion that San Bernardino County is not the only place where the foul-brood inspector is not giving satisfaction.

* * *

My youngest son has discovered that bare legs in the apiary are preferable to legs covered with black stockings so far as the number of stings received is concerned.

* * *

"It is an ill wind that blows no good." For weeks we fretted and fumed because of the dark cool weather holding the bees back; but many failed to realize that other things were being held back at the same time. At this date, June 1, there is still some orange bloom, this being the latest date my knowledge records for this bloom.

* * *

The well-known phrase, "Keep more bees," is all right in a way, but it is necessary to have the way as well as the means. No one would like to increase his holdings more than the writer, and I am trying to accomplish it as fast as possible; but so long as family expenses are more certain than honey crops, and with six children to feed, clothe, and educate, I must go carefully and look first to the welfare of a growing family, branching out as the way opens.

* * *

There is a fast-growing sentiment against grading honey water-white. There is a very small amount produced that is actually water-white, and what there is should command a fancy price over the next-best grade. Buyers are largely responsible for the dissatisfaction in this grade. Contracts are taken early in the season for water-white. If the season is poor and the supply limited, any fair grade is usually taken under the contract; but if the season is good and the supply large, much quibbling is done over color, and only the very best lots are accepted without question.

* * *

Mr. E. D. Bullock, of this city, has secured 8 tons of orange honey from 240 colonies moved in from the sage-fields. This is the largest amount per colony secured by any one, so far as I have learned. In a recent conversation with Mr. Bullock he told me of having fixed a watering-place

for his bees, which was used freely until the orange bloomed, after which it was deserted—the conclusion being that they secured an ample supply of water from the thin nectar of the orange.

* * *

Some orange honey has been secured. The weather has been very favorable since May 12, sage yielding well, but the bloom being very limited, and no prospect for a large amount being stored. The sage weevil has been the worst for years, many buttons being entirely destroyed before blooming. A slow flow for some weeks is probable from alfalfa (wild) and white sage; the button variety will soon be finished. Late buckwheat should yield well this season. Many who are located out of reach of early pollen and nectar yielding plants, owing to the extremely dry winter, will secure only a very limited crop.

* * *

HOW TO REACH THOSE WHO DON'T TAKE BEE JOURNALS.

I have been criticised for saying so much about foul-brood conditions in our State. I believe I have written nothing but the truth regarding this matter. The chief objection seemed to be that, in giving these facts to be published, I have been scattering it all over the world, when it concerns only us in California. If I am reaching the beekeepers of the world by trying to wake up our California readers to the extent of their danger, all well and good; but how to wake up a few thousand that take no bee paper is a puzzle to me. Considering the number engaged to a greater or less extent in the industry I believe California can show up a greater per cent of ignorance than any other State in the Union. This is not saying, however, that we do not have some of the foremost producers in the world.

There is a general sentiment in favor of a new and better foul-brood law, but some jealousy exists between different factions and individuals. This should not be carried to a point that will jeopardize the enactment of a new law. Every association, club, and individual should help secure this much-needed legislation. This campaign will be my last effort to help secure a new law. It is not a selfish effort on my part, for, from a selfish standpoint, I would rather let the disease spread and clean about two-thirds of the bees from the ranges. I can take care of myself.

Conversations with Doolittle

At Borodino, New York

MANAGEMENT OF SUPERS.

"Some of my colonies are working nicely in the supers of sections; others are not at work at all. How can I manage the colonies in general so as to secure the best results?"

"The first thing is to be certain that the colonies are all strong enough for work in the sections. Many put on supers promiscuously, without regard to strength of colony, and then wonder why all do not go to work in the sections. It is of little use to put supers on any of the hives until the brood-chamber is well filled with brood and bees, as a good yield can come only from colonies *strong* in bees.

"But sometimes it pays to start colonies at work above a brood-chamber which is being filled with bees from the brood after the combs are about three-fourths filled. This is done by putting a queen-excluder over the brood-chamber, and putting a super of half-depth extracting-combs on top. This half-depth super full of combs gives the bees a chance to store any small amount of nectar that may be coming in, or to remove any honey from the combs below that may be in the way of the laying queen. At the same time, the bees become accustomed to working above their brood. Now, when the flow of surplus nectar comes, if this extracting-super is removed and a super of sections having one or more baits is put on, the bees, being used to going above, will occupy the sections at once, and work will progress in the right direction.

"If the colony is very strong, this first super can be raised after three days, and a super of sections filled with foundation placed under the first one. The bees will then begin to draw out the foundation, thus relieving any congestion of bees in the hive. This is a great help toward overcoming any disposition to swarm, as well as toward the filling of a larger number of sections. Now, if it should happen that some colony is not at work in the sections, the upper super of some strong colony, in which good work is being done in both supers, can be removed in the middle of the day and carried to the colony in question, putting this super next to the brood-chamber, and the super in which no work is being done, on top. In the middle of the day, nearly all the bees in any super are young bees, therefore are received with their stores at once as part of the family, so that the work goes on without interrup-

tion. The colony from which this super was taken will probably need another.

"If the season for surplus is not far advanced, another super can be put under that already on; but if there is any doubt as to where to place it, I consider it better to put it on top. Putting a super underneath sometimes results in many sections in which the work has not been completed, if any thing happens to cut the season short. In case of a 'downpour' of nectar or a long-drawn-out season, putting the extra super on top gives ample room for expansion, and most of the sections worked in will be completed.

"After having been caught two or three times by a shortened season, with thousands of unfinished sections and only hundreds in marketable shape, because of putting the empty supers under, I have adopted the plan of putting the empty super on top at all times except during the fore part of any bloom which is likely to give a surplus in the sections. By this shifting of supers, bees and all, from hive to hive as needed, all colonies are in a measure equalized, as the young bees when taken with the supers usually stay where they are carried. I do not think it a good plan to put an empty super (that is, one having the sections filled with foundation) under a super in which the bees are at work until the one already on is at least half or two-thirds filled, for the bees to quite an extent will begin to draw out the foundation, storing honey therein, so as not to have a vacant space between the 'treasure house' above and the brood below. It generally results in unsealed, thin, lean, or 'washboardy' sections, which are not wanted.

"As the season draws toward a close, the work should be in an opposite direction from that at the start, as it is well to have all half-filled sections finished as rapidly as possible. Where colonies are slowing up in their supers, such supers should be taken, bees and all, and set on the super of hives from which a super of finished sections has just been taken. This, you will note, is the reverse of the plan used at the beginning of the season, for we now give to the strongest and take from those slowing down. The bees from this shifted super, now set on top, are doing more than they would where they came from by reinforcing those that were doing good work before, while the colony from which they were taken is not impoverished thereby."

General Correspondence

THE PURPLE AND BLUE FLOWERS OF NORTH AMERICA

Do Bees Show Preference for any Color? Are they Color Blind?

BY JOHN H. LOVELL.

There are 422 purple flowers in our eastern flora. Purple is an artificial rather than a natural category, and the term is used rather as a matter of convenience. It is widely used by systematic botanists, and, though open to many objections, there seems to be no convenient substitute available. If an accurate scale of colors should ever be adopted it will very likely be discarded altogether. All colors with their various tints and shades, including the browns and grays, are represented in the solar spectrum except purple. This sensation is produced by the combination of two sets of light-waves—red and blue, or violet. Often purple flowers contain two or even three pigments. It has been suggested that, instead of attempting to name their hues, the percentages of the different colors composing them should be given. By using Maxwell's color-wheel the purple of the dahlia may be produced by mixing 14 per cent red, 7 per cent blue, and 79 per cent black. Heliotrope purple is produced by mixing 25 per cent each of red, blue, black, and white. While such formulæ have the value of accuracy, it may well be doubted whether they would convey to the average person much idea of the color of the flower.

Purple flowers may be divided into three groups—dull or lurid purple, red purple, and blue purple. Red purple should usually be classed with red flowers, which as a rule they resemble in structure and manner of pollination, as in the orchis, geranium, loosestrife, and evening-primrose families. On the other hand, blue-purple flowers belong with blue flowers, as in the pea, figwort, and mint families.

Dull or lurid purple flowers are often adapted to flies. The purple trillium, which children so often gather in early spring, only to throw away soon because of its disagreeable odor, contains no nectar, and is attractive to flies alone. In the lurid-purple flowers of the Dutchman's pipe, the calyx is prolonged into a tube, with a contracted throat, either straight or shaped like the letter S, which is set inside with reflexed hairs. Flies can creep in easily, but the hairs prevent their escape. As soon as the anthers have ripened, the hairs wither, and the imprisoned insects, now more or

less covered with pollen, are set free. These flowers should be compared with the pitcher-like leaves of the pitcher-plant and the spathes of Jack-in-the-pulpit, as all three serve as traps for small flies, and are lurid purple, a color which is thought by some to be attractive to these insects.

Brown flowers usually owe their hues to a mixture of chlorophyll or carotin with anthocyan. There are two kinds of pigments in the flowers of the Carolina allspice and the North American papaw, in gooseberries, and various species of orchids. In the European flora, bartsia has black flowers; but I know of no wild flowers in the Eastern States which are black, though a number have black centers; but under cultivation we have black pansies and tulips.

..THE BLUE FLOWERS OF NORTH AMERICA.

The blue flowers in northeastern America number 325. Blue is the highest color in the floral world, and undoubtedly blue flowers were the last to be evolved. Blue is Nature's favorite color, the hue which she has reserved to adorn her culminations in flower-building. Simple, small, regular flowers, as has already been shown are usually white or yellow, as the water-plantains, buttercups, and five-fingers; but genera and families with highly modified odd-shaped corollas are most frequently blue-purple or blue, and often they are variegated with other hues. For instance, in the buttercup family, while the buttercups are yellow the bilateral larkspurs and aconites have blue sepals and petals. Again, in the rose family the regular rotate five-fingers are yellow and the roses are white or red, but there are no blue blossoms; but in "the sister family" of the *Papilionaceae* or pea family, where the corolla is butterfly-shaped, blue and blue-purple forms are common.

Many violets are also blue, but some species occasionally revert to yellow. In some flowers of *viola tricolor* the petals are yellow when they open, and gradually change to blue, while others change to blue before they open. There are varieties of the pansy with both yellow and blue flowers, and a number of the simpler species of this genus always have yellow flowers. Thus there is good reason for believing that the primitive or ancestral forms of the violet family were yellow. All the twelve species of the spiderwort family, except one which is rose-colored, have blue flowers. They are attractive to bees, as are also many blue flowers in the lily and iris families.

Among the apetalous families, which number 384 species, there are no blue flowers. The flowers are mostly small, and have probably degenerated. In the heath, huckleberry, and primrose families; in the mustard, saxifrage, rose, mallow, St. John's-wort, evening primrose, cornel, and (with three exceptions) the carrot, and many other families, there are no blue flowers.

It is in the gentian, borage, verbenas, mint, nightshade, figwort, and bell-flower families that blue flowers reach their maximum. All of these families are of comparatively recent origin, and they contain nearly 400 blue-purple and blue flowers. In the mint and figwort families, flowers of these colors are very numerous, and are often dotted, striped, or maculated with white, yellow, and red. We have here the culmination of color display among flowering plants.

These flowers possess very singular forms, as in the skullcap, monkey-flower, and snapdragon; and the nectar is so deeply and carefully concealed that few insects besides the long-tongued bees can obtain it. In some instances a single species of flower is visited by a single kind of bee, as one of the larkspurs by one of the bumblebees. In general, all blue flowers are bee flowers. But not all bee flowers have bizarre or grotesque forms. The gentian family contains 16 regular flowers, which are blue and likewise adapted to bees. In the Alps the gentians are very abundant, and display vivid masses of blue coloring. Huxley, while seeking health in the bracing air of these mountains, found great pleasure in studying these flowers, to an account of which his last paper was devoted. The intensity of their blue has been well described by Bryant in his lines to a fringed gentian:

Blue, blue, as if the sky let fall
A flower from its cerulean wall.

A generation ago Sir John Lubbock (Lord Avebury) published an account of some experiments he had made, and asserted that they proved that honeybees prefer blue to any other color. This statement was universally accepted and everywhere published. Hermann Muller also made many similar experiments, and came to the conclusion that honeybees prefer blue to red, and red to yellow or white. According to these observers, blue flowers have been developed in response to this preference of bees; but why they prefer this hue they have never attempted to explain. Their selective influence had developed blue-colored blossoms, it was believed, in a great variety of families. On the other hand, a blue flower, other things being equal, is more

likely to attract bees than any other hue. But later naturalists are inclined to be more skeptical. Cowan, in his well-known book on the honeybee, says that Lubbock's experiments are not at all conclusive; and after carefully reading the original descriptions I quite agree with him. Plateau declares that Muller was misled by a too vivid imagination; and that not only do honeybees exhibit no preference for blue, but they can not even distinguish between colors. In this latter assertion Plateau was mistaken, as I am showing in a series of articles in the *American Naturalist*. Bees easily distinguish between different hues; but whether they are more strongly influenced by blue than any other color I do not as yet know. I certainly do not think that it affords them an esthetic pleasure.

If, then, blue coloring has not been developed in response to the esthetic sense of bees, can we account for its appearance in any other way? Let us make the attempt. Simple, wheel-shaped flowers, which have the nectar fully exposed, are usually white or yellow, and are visited by a great variety of insects. The buttercups, water-plains, five-fingers, and many genera in the mustard, saxifrage, and carrot family are familiar examples. Insects often visit indiscriminately these species, which still retain the power of self-fertilization.

On the other hand, genera adapted to bees usually display a variety of colors, as violet, blue, brown, red, yellow, and white, especially when they bloom in the same locality and at the same time. Common examples are the aconites, sages, and clovers. The nectar is more or less deeply concealed, and the floral mechanisms are often intricate.

Honeybees in collecting nectar are faithful, as a rule, to a single species of flower—they exhibit "flower fidelity." Even when the flowers are nearly alike in form and color, the bee often shows a remarkable power of discrimination. If all the flowers blooming at the same time in a locality were of the same color, it is evident that bees could not distinguish between them as readily as when there is a variety of colors contrasting with each other. Numerous color difference in bee-flowers are, therefore, an advantage both to the bees and the flowers; and this is the reason that they have been evolved. There can be no doubt that bees can distinguish between different hues, and can make their visits more quickly and easily because of the contrasts of flowers in coloration. In the development of bee-flowers from primitive genera, red and blue hues have appeared, not because

they gave the bees an esthetic pleasure, but because of their utility.

Both red and blue flowers owe their coloring to a pigment called anthocyan, dissolved in the cell-sap, which in the red flowers is acid, and alkaline in the blue flowers. Anthocyan is probably a compound of a tannic acid and a sugar, for it occurs only in plants containing tannic acid, and it rapidly increases when such plants are fed with an invert sugar. Its formation is also stimulated by strong sunlight. Very likely, instead of one pigment there are several closely related soluble pigments.

If the cell-sap is very strongly acid, a red flower will be likely always to retain its hue; but if it is nearly neutral it may change to blue, either in the bud or after expanding. Finally, if the cell-sap is alkaline the blue hue will appear in the bud. In both fruits and flowers, as they mature, the acidity tends to decrease. This is very noticeable in many fruits, where, from being hard and sour, they become sweet and mellow. In the blueberry and many other berries the color becomes blue.

A majority of bee-flowers, as a matter of fact, are red or blue. Of 100 species of bee-flowers growing in the Alps, 34 are white or yellow, and 66 red or blue. In the German and Swiss flora, 152 bee-flowers are white or yellow, and 330 red, violet, or blue.

Blue flowers often change to white, sometimes to yellow, and occasionally to pink or red. In the *American Garden* for January, 1890, a variety of perennial phlox is described, the flowers of which in the morning were clear blue, remaining this color until nearly noon, when they gradually changed to a delicate pink, and by evening were a beautiful deep rose.

Many purple and blue flowers are valuable as honey-plants, as asters, thistles, borage, blue lupine, blueweed, catnip, and to a variable extent many other species belonging to the pea, mint, and figwort families. Blue flowers, however, appear as a whole to be of much less value as sources of nectar than yellow or white ones. The blue lupine, for instance, in Texas in some seasons completely carpets the ground for miles; but according to Scholl it does not yield nectar very abundantly, and in some years fails entirely.

As the result of our examination we conclude that the secretion of nectar does not depend either upon the color or form of the flower. The catkins of the poplar are pollinated by the wind, and do not contain nectar; but there are nectaries at the base

of the leaf-stalks. Both the flowers and the leaf-bracts of the cotton secrete nectar. Mr. Yanney says in *GLEANINGS*, "When atmospheric conditions are just right, such large drops of nectar will collect on these leaf-glands that one may readily taste it; and a bee has to visit only a very few to obtain a load. At such times they neglect the blossoms entirely, and the honey comes in with a considerable rush." Many other plants also have extra-floral glands. They occur on the stipules of the common field bean, and likewise on the leaf-stems of some kinds of plums. Nectar-glands are also found on the stalks of some species of ferns so that primarily this function seems to exist quite independently of insects, though of course it has been developed in flowers to attract their visits.

Finally, in the lists of honey-plants the elm and hazelnut are occasionally included. Both are wind-pollinated, and contain no nectar. Neither is the cardinal flower of value to the beekeeper. It is adapted to hummingbirds, and the nectar is beyond the reach of bees.

Lists of honey-plants should distinguish between flowers pollinated by insects and those pollinated by the wind. The latter, according to my experience, do not contain nectar, though there are sometimes extra-floral nectaries. The plantains and a few other species, however, are in an intermediate stage, and are pollinated both by the wind and by insects, and are nectariferous. It would also be of interest to state the color of the flower, the kind of odor, if any, it possesses, also its form, and whether conspicuous or not; whether the nectar is deeply concealed or fully exposed, and whether there are numerous other visitors.

Waldoboro, Me.

THAT IMPERIAL COUNTY ORDINANCE

Bluff Legislation

BY J. EDGAR ROSS.

On page 90, Feb. 1, there appeared a short letter from A. F. Wagner, our county bee inspector, stating that an ordinance had been passed by the board of supervisors that would prevent the shipment of bees into this county after Feb. 1. The letter escaped my notice at the time, though I afterward read the comments made upon it by other writers, and thought there must be a misunderstanding somewhere, as I was quite sure that no such ordinance had ever been passed.

An ordinance was passed by the board of supervisors, they no doubt believing that it was for the "protection of the bee industry of this county;" but as it turned out, it looks like a piece of jobbery, and no real attempt has been made to enforce the ordinance beyond trying to bluff any newcomers who were not in the click. In a measure this bluff has been successful.

The history and a summary of the ordinance in question might be interesting to the readers of GLEANINGS. A copy of the ordinance in force in Orange County was brought before the Imperial Valley Beekeepers' Association by Mr. Wagner, who sought the association's endorsement upon a similar one for Imperial County. It was not enthusiastically received, but Mr. Wagner was appointed a committee of one to secure signers to a petition asking the board of supervisors to pass the ordinance. This did not meet his approval, and he called a meeting of the Valley beekeepers to consider the matter. Of about fifty beekeepers in this valley, just nine responded. I was the only one of the nine who opposed the ordinance, and my opposition was based upon my belief that it could not be enforced. I had no thought at the time that it was to be used as it has been since its passage.

The ordinance, in brief, provided that any bees brought into the county must be marked with the place whence they came, and that the inspector must be notified within 48 hours of their arrival. There were other minor provisions that really added nothing to our State law, and were practically worthless as a safeguard against the introduction of brood diseases.

But here was the joker. It gave the inspector power "to quarantine bees from any county, State, or foreign country, where brood diseases were known or suspected to exist." That practically meant everywhere. But the law gave the inspector no power to enforce his quarantine, nor did it attach any penalty for violating it. I asked Mr. Wagner how he expected to enforce his quarantine, but received no satisfactory answer. I signed the petition, however, as I believed he would make the attempt, and it would give the courts an opportunity to decide whether or not the law would hold.

Since the passage of the ordinance, bees have been brought in by the carload from infected counties by the most enthusiastic supporters of the ordinance, and without any opposition on Mr. Wagner's part.

Mr. Roy Bateman, a farmer located near this place, decided to embark in the bee

business, and went to Mr. Wagner to make arrangements about bringing in a carload of bees. As Mr. Bateman was an "outsider," he was forbidden; but upon his insistence that the ordinance was unconstitutional, Mr. Wagner told him to consult with a certain beekeeper in this vicinity, saying that if this man made no objections it might be arranged. Though I have as many or more colonies of bees than the man in question, I was not consulted, possibly because Mr. Wagner felt sure that I would tell Mr. Bateman the truth of the situation, and welcome him to the ranks of beekeepers, while he could depend upon the other party working the bluff for all it was worth. Mr. Bateman, however, refused to be bluffed; brought in his carload of bees, and when they were inspected by Mr. Wagner the latter made the remark that that ordinance would frighten away some people anyhow. Shortly afterward I took Mr. W. to task at a meeting of the beekeepers' association for non-enforcement of the ordinance, and he said he was doing all he could, and that it had kept out at least 2000 colonies of bees. That is the key to the entire situation. *It was meant and is being used to keep out bees, not bee diseases*, and it succeeds in this only when the incoming beekeeper can be bluffed, for Mr. Bateman is not the only "outsider" who has brought in bees.

I do not mean to encourage the importation of bees into this county. There may be, as most of the older beekeepers claim, quite enough here already. I have 600 colonies in a territory less than one mile wide and six miles long, and there are four other small apiaries in this territory, besides many scattered bunches of from three to a dozen colonies, and bees could probably be bought in the county cheaper than they could be shipped in.

But I strongly disapprove of "bluff" legislation of any kind. This quarantine regulation and inspection of bees in general is a good thing; but it has often been abused, to the detriment of the public at large and to the beekeeping industry. The idea of quarantining healthy bees because they came "from a county, State, or foreign country where brood diseases are known, or suspected, to exist," is preposterous. We have foul brood right here in Imperial County, so we can not keep out that disease by keeping out all bees.

Let us have no more of these stupid county ordinances. Our State law is sufficient until we can get a better one.

Brawley, Cal.



FIG. 1.—Irving Kenyon's apiary and honey-house, near Syracuse, N. Y.

SCREEN DOORS FOR HONEY-HOUSES

A Practical Scheme for Making One that can be Opened Either from the Inside or Outside of the Building when both Hands are Occupied

BY IRVING KENYON

[When we visited Irving Kenyon, a beekeeper who lives just outside of Syracuse, N. Y., we were particularly pleased with some very ingenious contrivances that we saw at his place; and one of them was a scheme for opening a screen door without using a hand. The middle crosspiece projects beyond the side of the door, making it possible to open the door with the elbow if the hands are loaded. But the reader's attention is directed particularly to the "kick-open" projection at the bottom; see Figs. 2, 4, and 5. For a little simple thing that any one can make and attach to his honey-house doors, either solid or screen, it is the best labor-saver we have seen in any beeyard for a long time. To use the language of the boy, "It takes the cake."—ED.]

I take pleasure in describing some of the plans and fixtures used in our beeyard work which may be of interest to the readers of GLEANINGS. In making a screen door for our honey-house I had several points in view. First, it must keep the bees from getting in, and also allow any that may be carried in to find an easy exit. Second, it should be made so the wire cloth may be renewed easily. Third, it should be so arranged that it can not mash bees in closing. Our old door mashed any bees that were near the frame when it closed, giving the building an unsightly appearance; then it warped at the top enough to let the bees in. When put together with nails it was not easy to renew the wire cloth. The door shown in the picture obviates all of these troubles, as the description will show; besides, we have it now so we can open the door from either side with the foot if we have hives or supers in our hands.

By looking at Fig. 2 it will be seen that the inside of the frame of the screen door is the same width as the opening for the wooden door of the building, giving us the benefit of all the light and air possible.

Perhaps the reader will be able to understand better if I give the measurements I used; then he can vary it to fit his door. I would advise using soft pine for the door-frame, as it is less liable to swell and warp

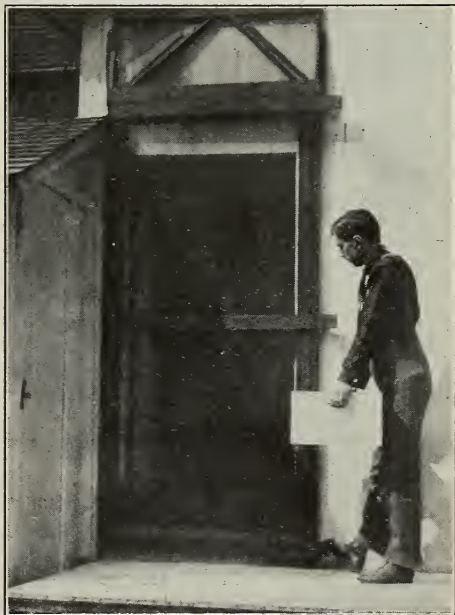


FIG. 2.—Kenyon's honey-house screen door, showing how it is opened with the foot.

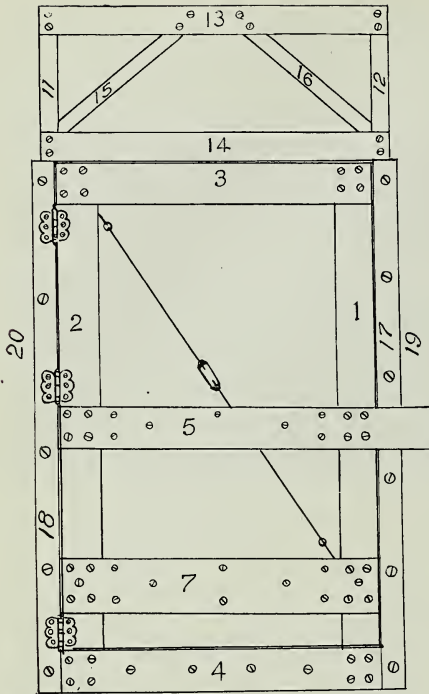


FIG. 3.—Diagram of Kenyon's screen door; the lower "kick-open" device not shown.

than most other woods. The reader will probably use such thickness of lumber as he thinks is required or is most convenient; but I will assume that it is all $\frac{7}{8}$ inch thick; so in giving measurements I will not mention thickness. I used $\frac{7}{8}$ lumber for all except pieces No. 13, 15, and 16. To help the reader to understand where each piece goes we will number them as per the diagram here shown. Nos. 1 and 2 are the sides, and are $2\frac{3}{4}$ inches by the length required to extend 6 inches above the door, and 4 inches below if the steps will allow it. Nos. 3 and 4 are $2\frac{3}{4}$ in. by 3 ft. $5\frac{1}{2}$ inches. No. 5 is $2\frac{3}{4}$ in. by 3 ft. $11\frac{1}{2}$ inches. This is the center crosspiece.

No. 7 is 6 in. by 3 ft. $5\frac{1}{2}$ inches. This piece should be so placed that its lower edge will be one or two inches above the threshold of the wooden door. See Fig. 2.

No. 6, not shown, is $2\frac{3}{4}$ by 3 ft., and goes between Nos. 1 and 2, directly back of No. 5, and is fastened to No. 5 with screws, the wire cloth being between 5 and 6.

No. 8, not shown, is 6 inches by 3 feet. It goes back of No. 7, and is fastened to it with screws. Nos. 7 and 8 are made wider to help stiffen the door and to push against with the foot to open the door from the inside when the hands are engaged. All of

these joints should be squared in a miter-box if possible.

The manner of putting the door together will be almost apparent from the diagram and the half-tone illustration accompanying. Strips 1 and 2, as well as crosspieces 6 and 8, not shown in the diagram, that go under 5 and 7 respectively, are temporarily tacked to the floor while the wire cloth is being fastened on. In doing this, care should be taken to see that the cloth is properly stretched to avoid any baggy places. Cross-strips 3, 5, 7, and 4 are next screwed in place, as shown by the screw-heads in the diagram, leaving the wire cloth under and between strips 5 and 6 and strips 7 and 8. Screws are used so that the wire cloth can be renewed at any time. The position of 7 and 8 should be just above the floor on the inside to receive the bunt of the foot to open the door when operator is coming out. By consulting the illustrations, Fig. 5 particularly, a sort of projection will be seen, the purpose of which is to enable the operator, when going in with a load, to open the door with one foot. When Mr. Root was here he seemed particularly pleased with the kick-open arrangement, and it is certainly a great convenience and a time-saver when both hands are carrying a load.

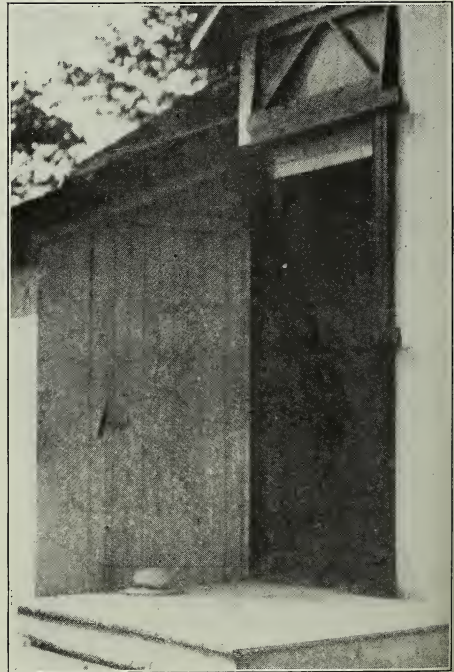


FIG. 4.—Another view of the door, showing the bee escape at the top.

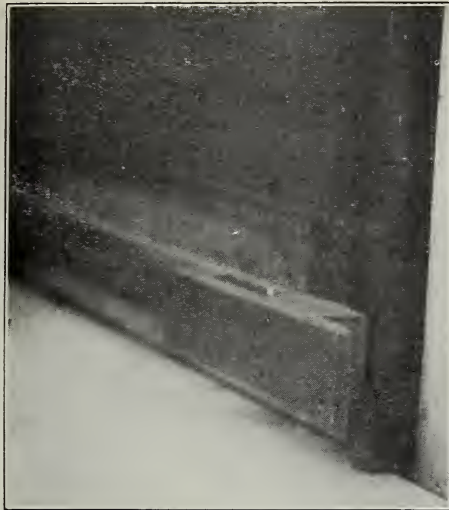


FIG. 5.—The "kick-open" device.

For the bee escape over the door we want two pieces, Nos. 11 and 12, $1\frac{3}{4}$ inches wide by 20 inches long. Next, two pieces, No. 13 and 14, about 2 inches wide by 3 feet $7\frac{1}{4}$ inches long. No. 15 is $1\frac{3}{4}$ wide by the length required to reach from the lower left-hand corner to near the center of No. 13. No. 16, of course, is to be the same length for the other side. Nos. 15 and 16

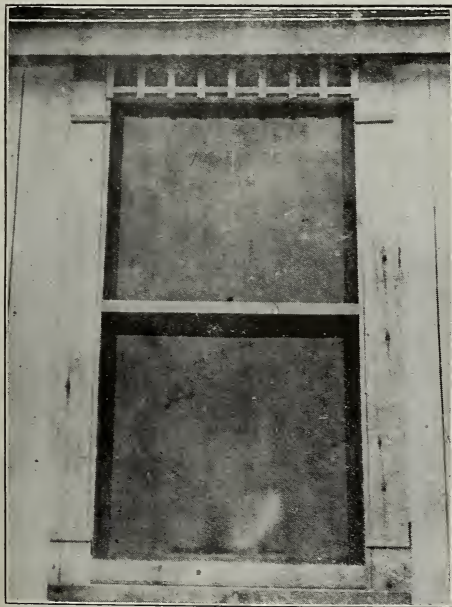


FIG. 6.—The bee escape above the window, on the outside.

are to be about $\frac{3}{8}$ inch apart at the top. It would be better if Nos. 11, 12, 15, and 16 were tapered to $\frac{3}{8}$ inch at the top. The bee escape is put together in the manner shown in the diagram over the door. The wire cloth is cut large enough so that it will project two inches above the top piece No. 13. It is then nailed to the back of pieces 13 and 14, taking care to have it project above 14 by 2 inches. Wire cloth and cross-pieces 13 and 14 are then screwed and nailed to 11, 12, 15, and 16 after they are in place. When properly put up, bees that collect on the inside of the door can crawl upward into the escape and finally out at

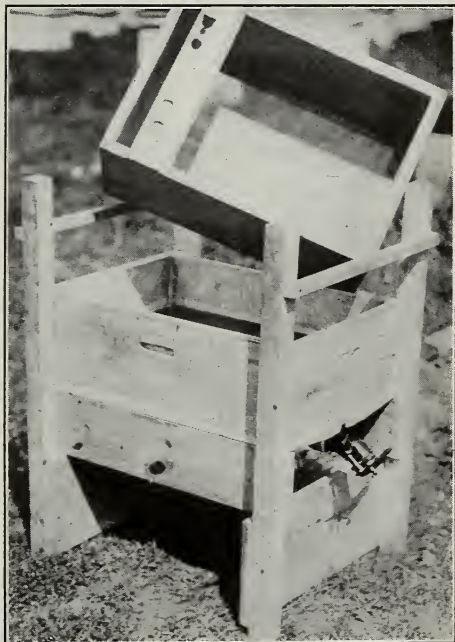


FIG. 7.—Uncapping-box with screen tray above, tipped up to show the construction.

the apex made by pieces 15 and 16 at the top.

In taking off our honey we sometimes find the bees in such condition that we can shake most of them out of the supers with a few shakes. Then the supers are taken to the honey-house and placed on end 3 or 4 high, so arranged that the light from the door will shine through them. The windows being darkened, the bees collect on the door, which we open occasionally, and jar them into the air on the outside. In doing this, or at any time when robbers are around the door, we kill very few bees, as about the only place where they can be mashed is on the three blocks, $2\frac{3}{4}$ inches

square. Any bees that we don't jar off the door soon find their way into and out of the bee escape at the top.

THE WINDOW-SCREEN.

Our window-screen is made as follows: Two pieces for the sides extend from the window-sill to within $1\frac{1}{2}$ inches of the top, and these are held together with the three crosspieces, $\frac{7}{8} \times 1\frac{1}{2}$ inches. The wire cloth is tacked on the inside of the frame. To make an exit at the top we nail some pieces $\frac{3}{8}$ by $\frac{7}{8}$ by $4\frac{1}{2}$ inches long to the top crosspiece, nailing them 3 inches apart. The lower end of these pieces should be even with the lower edge of the crosspiece. Next lay some $\frac{3}{8}$ by 3-inch pieces in between the upright pieces. Then lay on a strip of wire cloth 4 inches wide; next lay a $\frac{3}{8}$ piece over each one already on, and nail fast, the wire cloth being between the pieces. Owing to the fact that the frame of the screen is $1\frac{1}{2}$ inches below the top of the window, it leaves a space for the bees to pass out between the cleats nailed to the outside of the frame. It will be noticed that this window is close up under the eaves; see Fig. 6. For several years we had a window, the top of which was 20 inches lower than this one. The frame to the shorter window screen was made of pieces $\frac{7}{8}$ in. square. The side pieces extended 8 inches above the opening, and the top cross-piece was nailed on the outside of the side

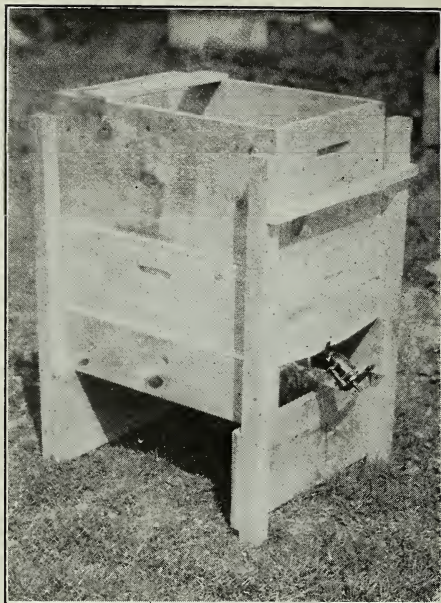


FIG. 9.—The box complete.

pieces. This gave a bee exit $\frac{7}{8}$ by the width of the window; and with such good light and a large exit any bee that found itself on the inside would work out in a short time. Much to my surprise, the bees never found their way in here when inclined to rob. Our present exit being nearer the eaves, and consequently darker, is much slower to work the bees out. It is an advantage to have all the light possible above an escape of this kind.

UNCAPPING-BOX.

First make a box 6 inches high at the sides, and with the bottom slanting toward the center. Ours was made 15 inches wide and 24 inches long. This box should be lined with galvanized iron, and have a honey-gate in one end, Fig. 7. Next make a box 12 inches deep. Have it rabbeted 7-16 inch square at the lower outside edge, so it will rest down in the tin-lined box. It should have some $\frac{3}{8} \times \frac{7}{8}$ cleats nailed on the lower inside edge. Then make a loose-fitting frame to rest on these cleats, and cover the frame with $\frac{1}{8}$ -inch galvanized wire cloth. This frame should have a center piece to prevent sagging. See Fig. 8.

Next get a piece about 5 inches wide, and as long as the box is wide. Halve this at each end so it will fit in the box snug. Make holes through it to receive the end of the top-bar to prevent slipping while using the knife. See Fig. 8.

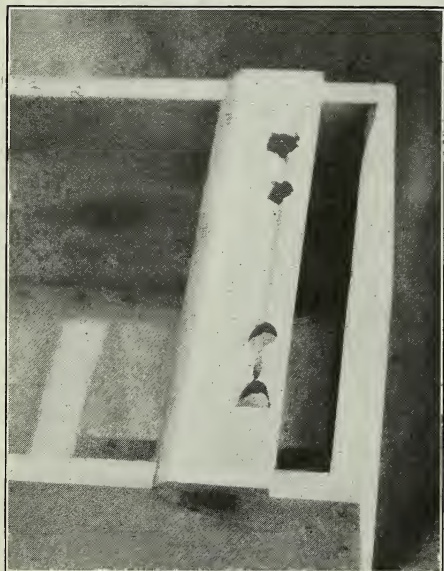


FIG. 8.—Closer view of the tray, showing the board across the top, with holes for the projection of the top-bars to rest in.

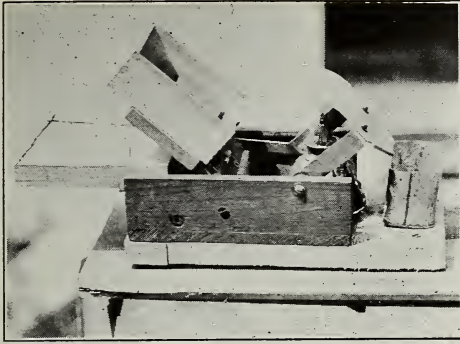


FIG. 10.—Changes made in the Dewey foundation fastener.

For a stand we take four pieces, 2x2, 24 inches long, for the corners. Next we get two pieces of $\frac{7}{8}$ stuff 10 inches wide, and as long as the stand is to be in width. Nail these to the 2x2, one inch from the end. Next nail two pieces, 6 inches wide and the proper length, to the 2x2, letting the lower edge rest on the ten-inch pieces, Fig. 9.

This uncapping-box was made when we did less extracting than now. We are about to build a larger one on the same plan. The new one will be 2 feet wide by 6 long.

THE DEWEY FOUNDATION-FASTENER.

Fig. 10 shows some changes we made in our Dewey foundation fastener. As the sides were inclined to spread and interfere with the working of the machine we put a piece the right length across the inside, and fastened the sides to it. When we received the machine it was rigged to operate by the foot with a chain. Mr. P. G. Clark gave us the idea of operating it by pressure of the body. Add a piece about six inches wide

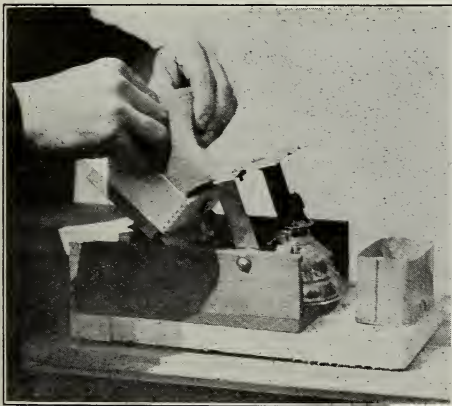


FIG. 11.—The fastener, operated by pressure from the body.

to the machine so as to bring it nearer to the body, when a slight forward movement will operate it. See Fig. 11. To hold the machine in place we cut a board as long as our work-bench is wide; then, laying the board on the bench, with one end against the wall, fasten the machine to the board where it is wanted. After a little practice the machine can be operated very rapidly. Syracuse, N. Y.

MOVING BEES WITH HIVE ENTRANCES OPEN

Nothing Used but Tobacco Smoke to Keep Bees in the Hive

BY GEORGE J. VAN DE VORD

We have a method by which we can go into an apiary, and, within fifteen minutes after lighting the smoker, safely pick up and load full colonies of bees without the labor of fastening a screen over the entrance, ventilating the hive, or previously preparing them in any way, except giving them a moderate smoking. Then we can drive to the new location without danger of having horses, attendants, or passersby stung, and also without the danger of smothering over-populous colonies.

The plan was suggested by the necessity of being able to move colonies in old warped or twisted hives that were difficult to make bee-tight. Then sometimes an old hive will give way on the road; and as the bees are always more or less infuriated by being shut up it takes lively and skillful work with the smoker to avoid trouble with horses; and if such an accident occurs on a well-traveled highway there is a great deal of danger of becoming a nuisance to the traveling public. While it may be a pleasant break in the monotony of life to a disillusioned beekeeper to watch the people frantically scamper away from his load of "pets" whenever by accident they get loose, it adds nothing to the good will that these people bear him or the beekeeping business in general if they are compelled to hustle away or stay and be stung.

Necessity is ever the mother of invention. This part of the east coast of Florida has been enduring a succession of very poor years for bees, and I have often had to move my colonies or lose them. My hives, moreover, were mostly second-hand to begin with, and it is very hard to make them bee-tight. Furthermore, I have had to move with as little loss of time as possible.

After trying different kinds of smoke into, on, and around hives from which bees were coming through various unforeseen



Geo. J. Van de Vord moving 41 colonies of bees, using only tobacco smoke to keep them in the hives. Mr. Van de Vord has moved bees for over four years without screens over the entrances.

cracks and crevices, I found that smoke having a part of its volume derived from tobacco has a very sedative effect without being stupefying or harmful if not used excessively. When I first tried the plan I risked it on only a small load. Though I did not close the entrances, and though I smoked the bees but a very little before loading them, I found that scarcely a bee flew from the hive during the journey which lasted about two hours; and the few that did were not looking for trouble nor making any. Since that time about four years have elapsed, and I have used the plan several times each year, and invariably it has kept the bees in a very quiet condition, even though they are sometimes severely jolted. The use of the tobacco smoke has furnished me a method of controlling them with the least possible expense of time in preparation.

In June, 1910, I had a double team hauling bees all day in hives with open entrances. We were moving first from my apiary at Ormond to a barge at the river front. Although we drove right up to the apiary, neither the driver nor the horses were bothered by the bees, even though the horses were left hitched up at all times while loading and unloading. The barge was then hauled down the river to Daytona that evening, and stood at the side of

the river facing Beach St. all day. The bees flew freely from the hives on the barge, and gathered pollen all day long, while another team and driver were hauling more bees from Daytona and loading them on the barge. These two sunshiny days in a Florida summer were a thorough test of the tobacco method of control, for part of the bees were Holylands and hybrids, and as vicious as yellow-jackets.

The barge was finally towed down to Ponce Park, the hives being stacked in rows three and four high. At this point we had to tie up for the rest of the night and all the next day, on account of adverse winds and the tide. During the next night, however, the wind dropped; and as soon as the tide was favorable we crossed to the North Indian River and moved down to the new location three miles south of Coronado, where, during the fourth day, the colonies were loaded. The bees began flying freely at once in quest of fresh water; but they were gentle, and not at all inclined to sting. The captain of the tug, although very nervous about the bees, and entirely unacquainted with their habits, volunteered to help in the unloading, and did so without veil or gloves, and without being stung.

The accompanying illustration of an auto truck loaded with bees was taken in May of this year. There were 41 colonies in all,

18 of which were two-story and 23 one-story. On this occasion I went to the apiary that I intended to move, at 8:45 A.M., lighted the smoker, and put in about two tablespoonfuls of tobacco dust and clippings, the rest of the smoker being full of partly rotted sacks. Then I went to each hive and puffed in two or three good strong blasts of this smoke at the entrance. I went around the apiary twice; and then, the auto having arrived, we started to load. The chauffeur was to help load; but he was afraid to go into the apiary on account of a few field bees in the air that were not in the hives when they were smoked, but we were safely loaded at last.

After we were started we moved down to Beach Street, where we were expecting a photographer. While waiting for him to arrive I opened a few hives and lifted out a comb or two to show several interested observers that all those "boxes" were packed full of bees that densely covered each comb, and yet they were not stupefied, as shown by the fact that they flew readily when brushed off with the fingers.

After the picture was taken we went on across the bridge, over the river, and up to Sea Breeze; unloaded the 41 colonies, and were back home within three hours. Before the last of the hives were lifted down from the truck the bees had caught the odor of the sweet bay blossoms all around them, and were commencing to fly very

briskly. I had to use smoke on those in the auto to keep them in, for those already unloaded were fairly tumbling out of the hives and relocating themselves. The strange thing about it all was that they were not cross, even though they had sniffed tobacco instead of the perfume of the blossoms.

I use no tobacco in the smoker for ordinary work in the apiary; and as a word of caution I should like to say it is a mistake to use nothing but tobacco in a smoker, or to blow the smoke into one hive for several minutes, for this makes the bees sick, so that they are in as bad shape as if they had been fastened in and overheated.

Daytona, Fla.

[With an experienced operator in charge, who is really an expert along this line, like our correspondent, and with hives that can not be conveniently and securely screened, we should undoubtedly advise the plan recommended. Perhaps we should go further and advise the use of the tobacco method of control generally; but if the hives are sound, so that they can be quickly and cheaply screened, and if the beekeeper has not had considerable experience, we should feel safer if the bees could not get out. If a three-inch rim is tacked on above the brood-chamber, and water carried along with which to cool the bees of any hive that show signs of becoming overheated, there is usually very little danger of trouble or excessive loss.—ED.]



Allender's apiary of black bees. Colony X by the fence has produced on the average \$10.00 worth of honey each year.



L. C. Root, veteran beekeeper as well as partner, son-in-law of, and co-laborer with Moses Quinby.
Photographed by Edward F. Bigelow, Sound Beach, Conn.

A COLONY THAT AVERAGED \$10.00 WORTH OF HONEY A YEAR FOR TWENTY-TWO YEARS

BY G. D. ALLENDER

The illustration shows my apiary of black bees, which for gentleness, hardiness, and ability to gather honey, have never been surpassed by any other varieties that have been brought into this locality. For instance, the colony in the hive marked X at the extreme right by the fence has been on the same brood-combs for 22 years. During this time it has been fed but once, and, with the exception of two years, has made from \$4.50 to \$28.00 of surplus honey each year—an average of about \$10.00 per year for the whole time. Furthermore, there has been about one swarm for every two years from this hive, on the average.

Kerens, W. Va.

L. C. ROOT AS HE IS TO-DAY

BY DR. E. F. BIGELOW

Under separate cover I am sending what seems to me a remarkably good photograph of our veteran beekeeper and missionary in beekeeping interests, Mr. L. C. Root, of Stamford, Ct. Please note how clearly the photograph shows even the brood-cells. Mr. Root has been doing good work in this vicinity by interesting a large number of people in beekeeping. He talks at various bee-gatherings, and is very active in speaking a good word for the bee naturalists. I count myself as primarily his pupil; and through me quite a large number, as you know, have become interested.

The other photograph* shows Mr. Root teaching a beginner. The man at his left is a workman who, not over an hour before Mr. Root's lesson, went running frantically across the fields stating that no amount of money would get him to go near those things. But this workman was to assist in taking care of the bees, and Mr. Root succeeded in showing him that bees are not such dreadful things as he thought they were. You will observe that he inspired confidence, so that the man came up without gloves or veil, and readily handled the frames. I think this is a remarkable example of taming a would-be beekeeper, who, like the public in general, had held frightful ideas regarding the terribleness of bees.

I wish I could have obtained a "before and after" photograph—that is, it would be interesting to show your readers a pho-

tograph of this man tearing across the fields, and striking right and left, about an hour before Mr. Root took him in hand and showed him that his nervousness and not the bees was his greatest enemy. I recently had a similar experience in teaching a gardener who had never been near bees to go up to the hive and take out the frames, without gloves or veil. It is true my man, unlike Mr. Root's, got stung once or twice, but he had nerve enough to say, "And sure you must expect all those things in a lifetime, and I guess they will feel better when I get used to them."

Sound Beach, Ct., June 7.

MY FIRST ACQUAINTANCE WITH L. C. ROOT BY A. I. ROOT.

When GLEANINGS was started, forty years ago, it was, I regret to say, quite the fashion for bee journals to criticise each other; and not only that, some prominent writers seemed to think that it was right and proper to fill the pages of our bee journals, not only with unkind but unnecessary criticism; and I am sorry to have to own up that your humble servant was given to that sort of thing; and as an illustration I did one thing I shall always regret. While I revered and respected both Langstroth and Quinby (both then living), I criticised father Quinby's hives that were then used largely, and perhaps are still, by a large number of York State beekeepers. They resented this, and took exceptions to A. I. Root and his "new methods," etc. I believe it was at a York State convention a resolution was passed, to the effect that A. I. Root, with his "dollar queens" and "one-pound sections," was doing more harm to beekeeping than he had ever done good. I think it was about this time, or shortly after, that, through the influence of the Holy Spirit, I got a new glimpse of things, and I started out on a new track. One of my departures was to attend a down-east beekeepers' convention. I can not remember now where it was, but I think L. C. Root occupied the chair. During the forenoon I had taken part in some of the discussions, and, as a matter of course, showed a friendly spirit as well as I knew how, toward the good people who had said unkind things about me (which I no doubt richly deserved) only a short time before. At the noon hour I shook hands and had a friendly talk with many of the prominent men present. As the session opened after dinner I had one of my "happy surprises." Our good friend L. C. Root, so far as I can recall, said something like this:

"I am sure I voice the sentiment of at least the greater part of our convention, if

* Cover picture for this issue.—ED.

not all, in saying we are very happy to have with us to-day Mr. A. I. Root, of Medina, Ohio. We are not only *glad* to have him with us, but I am sure I voice the sentiment of quite a good many when I move that we as a convention give him a hearty welcome; and since we have become better acquainted with him, express regret for the unkind things that have been said in regard to Mr. Root in some of our previous conventions."

If I have not gotten the above correct, I think it was the sentiment of what he said. I was at the time greatly impressed with Mr. Root's ability as an officer, as well as a beekeeper and as a genial Christian character. Since that time there has existed only the most friendly relations between ourselves and the great beekeepers of New York; and I am glad to add that the fashion of having unkind sparring and jangling in print in the bee journals (American, at least) has been done away with. I believe all now recognize that we have no room in our journals for personalities—especially personalities among good men.

When a great man dies, a kind Providence seems to have so ordered it that his mantle shall fall on the shoulders of some younger man. This seems to be emphatically the case with our good father Quinby. In an edition of the book, "Quinby's New Beekeeping," published by the O. Judd Co. in 1899, we find the following which we take from the opening words of the publishers' preface:

After the death of Mr. Quinby, the preparation of a new and revised edition of his work, which he had in contemplation, fell into the hands of Mr. L. C. Root, his relative and long-time business associate. This secured the incorporation of Mr. Quinby's latest views and methods, and the introduction of important improvements that had then just been tested, especially that of comb foundation, and the treatise thus embodied the experience of two skilled apiarists. The work was so largely rewritten by Mr. Root that he might in justice have claimed to be its author; but with rare modesty, and in a spirit of reverence to the memory of one who had devoted his life to the advancement and popularizing of bee culture, he preferred to retain the title of "Quinby's New Beekeeping."

AN OUTSIDER IN COLORADO

Swarm Control

BY DR. E. F. PHILLIPS

Continued from June 15

In comb-honey production in the East, all other problems fade into insignificance in comparison with the control or prevention of swarming. The number of colonies that can be kept is limited by the number that can be examined about once a week during the swarming season to do whatever is necessary to keep the bees at home and

working. It is, therefore, unusual to find men with 600 or 800 colonies run for comb honey in a number of outyards. Although some of the beekeepers of Colorado do not agree with the idea, it seems almost certain that conditions are not so conducive to swarming in Colorado as they are in the white-clover region. The usual methods of control seem to be about the same in Colorado as they are in the East. The best practice seems to be to examine every colony once a week for queen cells; and with several hundred colonies in yards scattered over the country this is no sinecure. A beekeeper who is kept busy with seventy-five or one hundred colonies should begin to suspect that he is wasting time and energy somewhere when he learns what is being done in Colorado. It is not exactly necessary to keep the grass worn away in an apiary in order to give the colonies the care necessary.

An important consideration in favor of the Colorado beekeeper is the fact that he is not interrupted in his work by inclement weather to the extent that the eastern beekeeper is. It is rather safe to plan for six days of work a week, with a chance at one more if the beekeeper can persuade himself that his bees have fallen into a pit.

NO WAX MOTHS.

As has been mentioned a number of times, the common wax moths which add interest to the monotony of beekeeping in the East are absent in Colorado. As Mr. Foster mentioned in a recent number of GLEANINGS, the Mediterranean meal-moth sometimes eats the pollen from stored combs. Messrs. Dyer and Burrows, of Boulder, brought a large number of colonies from Arkansas not long ago and incidentally imported the larger wax moth. Not being accustomed to thinking of damage from this source they were surprised to find a mass of webs in their workshop where the empty combs were stored. Since then the moths have entirely disappeared. Some entomologists would confer a favor by learning what there is in the climate of Colorado which is injurious to the bee-moth.

BEEES AND FRUIT.

The value of bees in carrying pollen is seemingly quite generally recognized by Colorado fruit-growers, and I learned of a number of instances where a few colonies were kept solely for that purpose. This is gratifying; but at the same time the practice opens up a source of danger to the professional beekeeper. It can scarcely be expected that a beewowner who is not a beekeeper will know how to detect and eradicate disease, and such apiaries may become

a worse menace than the almost universally neglected farm apiary, and almost as bad as that of the enthusiastic amateur. This is well illustrated in Massachusetts, where bees are used extensively in greenhouses to pollinate cucumbers. The practice offers a sale for colonies; but the discarding of weakened colonies is often blamed for the spread of disease. At the same time the awakening of interest in bees among fruit-growers will result in good beekeeping, especially in getting support in asking for new laws.

In most cases, when the loss of colonies due to the spraying of fruit trees is reported, it is safe to suspect that the beekeeper is mistaken. In the majority of such cases the trouble is probably a brood disease, and European foul brood is a safe guess. When such cases are reported, it is our practice to write for brood which may be affected, and it is usually easy to determine the cause of the trouble. However, several cases were reported in Colorado in which rather serious results to bees have followed spraying fruit trees in bloom. There is a State law prohibiting such practice, and in several cases it has been found profitable to use it as a club.

PURE MATINGS.

Apiaries are quite close together in the alfalfa section of Colorado, and pure matings are at least as difficult as in the East. However, there are, not far from the irrigating regions, places in the mountains where there are no honeybees. Mr. Foster informs me that he has seen white clover in profusion with nothing to work on it except wild bees. Such locations in the mountains are usually too inaccessible, and too limited for honey-producing apiaries; but they would make ideal situations for mating queens. This is an idea that belongs to Mr. Foster; but it may have occurred to many another beekeeper near the mountains. If queens can be mated without too great an expenditure of time and money per queen it would be a great thing for Colorado beekeepers if Mr. Foster can carry out his own suggestion in his capacity as State Inspector. The difficulty is that mating is the most expensive part of queen rearing, and many a man who has had visions of wealth from queen rearing has later found him selling queens for less than they have cost him. But we never know how a plan will work if we merely sit by and speculate. It is to be hoped that the plan may be tried.

THE COLORADO HONEY-PRODUCERS' ASSOCIATION.

Probably no phase of Colorado beekeeping has attracted more attention among the

beekeepers of the country than this co-operative association. Not having had much opportunity personally to study the workings of the organization, and not being particularly familiar with the methods of successful co-operative organizations, it would not be wise to discuss the merits of the various phases of the work. However, judging from the sentiments expressed by various beekeepers, and by the satisfaction which seems to prevail among the members, one is forced to the conclusion that it is a good thing, and that beekeepers in other localities would be benefited by a study of the plans of the association. So far as could be seen, there is no peculiarity in the conditions in Colorado which makes success in such an enterprise more probable than in other States. With the largest markets in the East there is the advantage in car-load shipments of a lower freight rate, but this applies equally to other localities.

The organization and enthusiastic management is doubtless largely due to the manager, Mr. Frank Rauchfuss. A question which promptly and naturally comes to mind is, whether the success depends solely on Mr. Rauchfuss or whether the organization would continue in as satisfactory a manner if he were to retire. This question is not of such vital importance to the Colorado beekeepers as long as Mr. Rauchfuss remains on the job; but it is of vital importance to beekeepers in other States contemplating a similar organization. Is it necessary to have a man of exceptional ability, or can any organization of beekeepers expect to find a man of sufficient ability and honesty to make a success of such a movement? Naturally we can not expect Mr. Rauchfuss to volunteer to retire, nor the association to retire him for the sake of answering this important question; but there is such great opportunity for the advancement of the interests of beekeepers by co-operation that the beekeepers in the several States should attempt to decide the question, and this subject should receive careful consideration in all parts of the country.

The association has very materially increased the price obtained by the producer for honey, especially comb honey, and has been instrumental in bringing about greater uniformity in the product and its grading. Sections containing bottom starters of foundation, and with full separators, have the sanction of the association, and the association's grading rules are carefully enforced. Bee supplies are sold at a reduction to all beekeepers, and other commodities are often obtained at a material reduction for members. Wax is sent to be

made into foundation in large lots for members. The association also carries on a local business in bottled extracted honey. These things in themselves are annually worth many dollars to the members; and, in addition, at the end of the year the profits of the association are equitably divided by a unique plan. The organization has been in successful operation for a number of years, and it is high time that beekeepers elsewhere were giving to this subject the consideration it should have. It certainly should be possible for the beekeepers in the best beekeeping States to organize on a business basis.

It should be mentioned that the Colorado Honey-producers Association is entirely distinct from the State Beekeepers' Association. It is obviously necessary to have money with which to conduct business, and unless some philanthropist puts this up it will be necessary for those who will reap the benefits to buy stock in the company. While a beekeepers' association can help its members materially, it is barred from many essential lines by lack of funds, and it will be just as well not to try to have the two organizations in one. If the business organization reduces the efficiency of the other, it matters little so long as the interests of the beekeepers are concerned.

COLORADO.

No normal outsider could write a paragraph on Colorado beekeeping without having something to say about the marvelous scenery. And yet it is utterly foolhardy to attempt a description that will not be a sacrilege. In our 1000-mile trip Mr. Foster and I crossed the Tennessee Pass, and recrossed the mountains over the celebrated narrow-gauge route by Marshall Pass, passing through Eagle Canon and the Canon of the Grand River going west, and the Black Canon of the Gunnison on the eastern trip. The Royal Gorge was part of a night trip going west; but we came through by day on the return, so that it was not missed. Where there was no special feature to be seen, there was always still enough of interest to excite any but one surfeited with scenery. So many interesting situations present themselves that one is tempted to forget his mission and stop to fish, hunt, or simply enjoy the views. The first trip to the Colorado Mountains should be for pleasure only, so that one may become accustomed to the grandeur before any duties come to distract attention. However, a hurried trip on business infinitely surpasses none at all.

All the world knows that the climate of Colorado is especially exhilarating; but to

know this to the full, one must be there in early autumn. No wonder that those unfortunates who have gone to Colorado on account of pulmonary troubles become so enthusiastic in their praise of the place where health is restored to them. It is almost worth having tuberculosis for the opportunity of knowing the climate. If you get tuberculosis or an opportunity, visit Colorado.

Washington, D. C.

RENDERING PARTIALLY DRAINED CAPPINGS IN A SOLAR EXTRACTOR

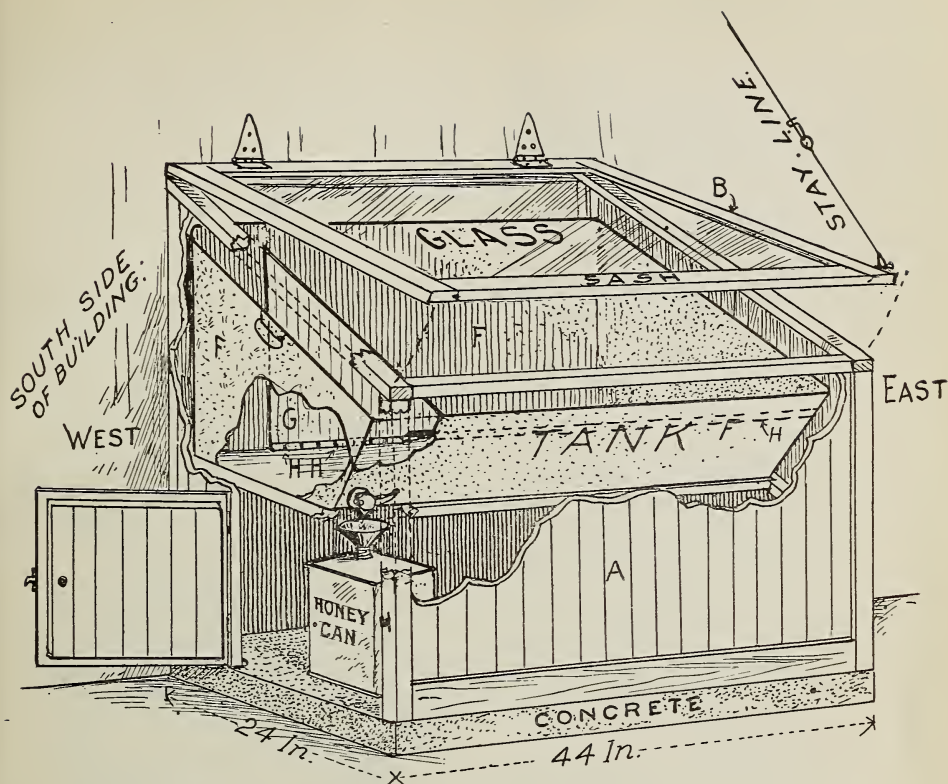
A Plan for Getting All of the Honey by Partially Melting the Cappings

BY HENRY STEWART.

There has been considerable inquiry for a method of handling cappings that will do the work better than the capping strainer or melter. I have a plan which I have used for several years, which I consider ahead of either of these. It is a sort of modification of the solar extractor. I call it the *solar honey-separator*. While it is somewhat the same in principle as the regular solar extractor, it does work that can not be done in the latter, and the honey is still in a very good condition as it runs out, as it is only slightly if any impaired. The best feature about it is that it is ready for business any time when the sun shines from May to October, not only for cappings but for odds and ends, broken combs, unfinished sections, etc.

This separator may be built anywhere; but to secure additional reflected rays of the sun it is better to choose the south side of a building. Reference to the illustration will show that A is an enclosure built on a concrete foundation adjoining the south end of my honey-house. It is 44 in. long, 24 in. wide, 36 in. high in front, and 50 in. high at the back. This enclosure is covered by a glass door, the under side of which is lined with felt or woolen cloth around the edges to make it tight. A double glass adds to the efficiency of the separator, although if not too much is expected a single glass is sufficient. To prevent rain water beating in, the hinge side of the glass door should be covered with a strip of oilcloth.

About two inches under the glass is a galvanized iron tank, F, resting on a framework so that it can be removed easily. This is 36 in. long, 14 wide at the bottom, and 18 wide at the top. It is 15 in. high in front, and 20 high at the back. Four inch-



es from the left (west) end is a partition G, which is soldered tight to the sides and bottom of the tank F, except a narrow opening $\frac{1}{4} \times 3$ in the lowest corner. This acts as the separator, as the wax, being lighter than the honey, floats on top of it, and is, therefore, confined to the right side of this partition, the honey flowing over through the narrow slot at the bottom into the four-inch compartment between the partition and the left end of the tank.

A slatted bottom, H, which inclines toward the back of the tank, supports the cappings in the sun, as it is located in such a position that no part of it is shaded.

To catch the cappings from the knife, I use a galvanized iron stock-tank having a slatted bottom above the true bottom, and a honey-gate at one end. The cappings are allowed to accumulate and drain over night. The next morning, with a pitchfork I remove a wash-tubful of cappings from which most of the honey has drained, and dump them into this separator on the slatted bottom. If the sun is not shining very

hot I stir them three or four times during the day as they melt. If the sun is very hot, I shade the glass partially by fastening over the top of it a piece of burlap. As the cappings warm up, the honey and a little of the melted wax drops through the false bottom into the cool shaded portion of the tank beneath, the honey running through as the level rises into its own compartment. The bulk of the cappings remains in a semi-melted state on the slatted bottom. This mass is allowed to harden; and the next morning, by the use of a chisel, it is pried loose and stored away until a convenient time for rendering into wax with the ordinary wax-press.

The honey is usually drawn off while it is warm, into a sixty-pound can, and strained through a wire-cloth strainer at the mouth of the can. The melted wax that drops through the slatted bottom is allowed to accumulate until the time comes for rendering, when it is removed and put through a wax-press with the rest.

Prophetstown, Ill.

ALCOHOL FOR CLEANING SECTIONS

BY S. N. HATHAWAY.

I have noticed that all my late sections are soiled, more than those used for the early crop. This probably comes from the natural desire of the bees to chink up every crack and cranny as a preparation against the cold winds of winter. Some swarms seem to try to daub on all the propolis they can make, while others are quite modest in the use of it, even to the last super. I had several supers this week that were so badly daubed that I nearly despaired of making them presentable in the shipping cases.

As I sat thinking how this could be entirely removed in some other way than by scraping so much, I chanced to see a bottle of denatured alcohol. Knowing that it would cut wax and propolis I made a swab by rolling some soft cotton cloth and tying it so as to make it convenient to use as a brush. I applied it freely, and then with a piece of cloth rubbed it off and scraped with the knife. When the sections were badly stuck up I repeated the dose and rubbed it again. It was a success; for when all had been treated, and were in the cases, they were as clean and nice as a newly filled super. This may not be new to the "old soldiers" in the business; but it is new to me, and is a time-saver.

GLASS NOT NECESSARY IN SHIPPING CASES.

It is my opinion that a one-tier 24-section case is the best for all purposes, with only a two-inch glass, if there must be any glass at all. The more glass used, the weaker the case is, and the more cracked sections in the cases. So I say, *no glass*. I think a bottom made of $\frac{7}{8}$ -inch board, cut to fit inside the case, would make it perfectly safe, as there would be no spring to the bottom, and consequently no chance to crack the honey unless the case should be dropped by some careless handler.

If the whole width of the front of a case is glass, a buyer sees but four sections, which may be extra fancy or No. 1; but if the packer is not honest and square, it's a guess as to the rest of the case. My verdict is, *no glass*. Take off the cover, and then you will know what is inside.

Each case should have a printed card, pasted on the top, reading, "Comb Honey, this side up. Handle with care." Following the above should be printed the several grades of honey, all of which may be crossed off with a pencil except the one packed in the case. The weight, tare, and net should be on the same card.

Waldron, Ill.

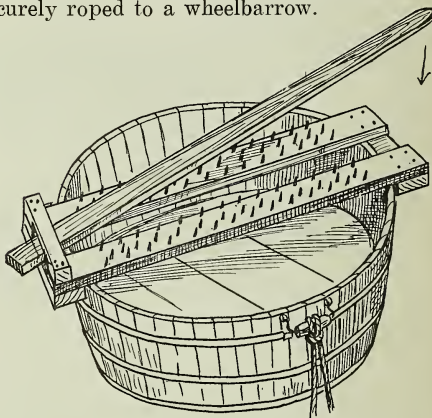
[You are entirely right in urging no

glass in comb-honey shipping-cases. More and more glass is being discontinued by the large producers, and we hope ultimately it will be a thing of the past. Shipping-cases with solid back and front are much stronger than the glass cases.—Ed.]

A SWEET-CLOVER-SEED STRIPPER

BY C. A. BUNCH.

Last fall I made a seed-stripper for gathering sweet-clover seed, which I found very useful. The construction is explained very fully by the illustration. The nails shown in the crosspiece are ten-penny size, driven zigzag about $1\frac{1}{2}$ inches apart. The stripper should stand on a good-sized wash-tub or tight box, and the whole apparatus securely roped to a wheelbarrow.



It takes three persons to gather the seed to the best advantage—one to cut the sweet clover with a sickle, and carry it to the stripper; another to draw it through the stripper, and run the wheelbarrow, and a boy or girl to handle the lever. We gathered four bushels of seed last fall, and the cost did not exceed two dollars per bushel.

When we get ready to harvest the seed we move the whole outfit out to the sweet clover, with a wagon, then proceed to rope it to the wheelbarrow. I do not fasten the rope to the tub, but to one end of the frame, then down under the wheelbarrow floor, and up to the other end of the frame, which holds the whole thing firmly. The rope must be drawn tight so as to make every thing solid, as pulling the clover through under the lever requires considerable strength. It is a good plan to spread a grain-sack or cloth across the handles of the barrow to catch the seed that might fall outside.

Lakeville, Indiana.

Heads of Grain from Different Fields

Australian Honey Crop Harvested in Kerosene-cans

In reply to a question, Jan. 1, p. 18, the statement was made that if second-hand cans had been used for benzine, they would do to store honey in; but if for kerosene, they would be of no use for the purpose. I think you are wrong. Practically the whole crop of Australian honey is put up in second-hand kerosene-cans. By "second-hand" I do not mean dirty or rusty cans. They are quite bright and clean, but they once contained oil. Many beekeepers purchase them by the thousand at 75 cts. per dozen from the dealers in Sydney and other large cities.

The cans have first to be mended—that is to say, the holes made to get the oil out have to be patched; then the round bung is taken out, and then they are ready for washing. A good solderer will mend 400 in a day; but it takes two boys to wash the same number in the same time. The method is as follows: The cans are spread out on the ground in long lines, about six deep. Boiling soda water is used (15 lbs. of soda to 20 gallons of water). One quart of this boiling soda water is put into each of six cans. The cans are picked up one at a time, and vigorously shaken, care being taken to see that the water gets right around the tin. This water is thrown away. The washer has a pad on each hand, with a piece of cloth next to the tin, and a piece of thick leather next to the hand. He picks up the can so that the pad on the right hand closes the bunghole, and this pad must be held tight, as shaking practically boiling water generates steam, and if a firm grip is not maintained there is every possibility of getting scalded.

After the soda water the same process is gone through again with boiling water, then they are rinsed with cold water, and turned upside down to drain. After draining they are placed right side up to allow the sun to sweeten them for a day, then they are packed away in an airy shed, and before being used each one is inspected, and if there is any smell it is rejected and washed again; but if the boss is around to see that the lads do their work well there are not many rejected.

The reason for using second-hand cans is one of price. They cost 72 cts. per dozen. The new tins cost \$2.64 per dozen, and they have to be given away with the honey; and as the returns are frequently less than \$1.92 per tin for the honey, you can see that relatively the price of the tin is a big item.

MAJOR SHALLARD.

South Woodburn, Australia, April 16.

[See Editorial elsewhere.—ED.]

Using Gasoline-cans for Honey

Editor Root:—In regard to using gasoline-cans for honey, page 18, Jan. 1, are you not mistaken in advising their use? I once drew some gasoline out of the auto into a two-quart Mason fruit-can. It stood in the can for some time, and then it was taken out, and the can thoroughly cleansed and then used for canning fruit. When the fruit was opened it had such a peculiar flavor that we could not eat it. I asked my sister what made it, and she said she had used the can that had contained the gasoline. For this reason I should be afraid it would give the honey a peculiar flavor as it did the pears.

Gasport, N. Y., Feb. 27.

JAMES H. SPROUT.

[If the cans contained a good grade of gasoline we do not see how the honey could be tainted, but, at the same time, we may be mistaken. Certain it is that bright new cans are none too good for as expensive a product as honey. If kerosene-cans are cleaned as thoroughly as described by Major Shallard, above, they ought to be as good as new.—ED.]

Honey-crop Reports from Southeastern Florida

Reports from the titi region show that the surplus flow there was good. Reports from the black and white tupelo-gum section show that the flow from these sources was either a flat failure or very light, owing to the great flood and the amount of rainfall which occurred during its blooming season. Reports from the saw-palmetto region show that it gave only a very light flow, owing to weather conditions. The flow from the mangrove was not as good as was expected.

Citrus fruit in its region gave the bees a good

start in early spring by a flow a little heavier than usual.

The gallberry gave a good yield in its region.

The flow from chinquapin was very light.

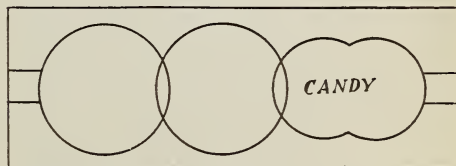
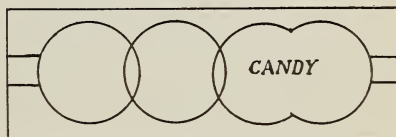
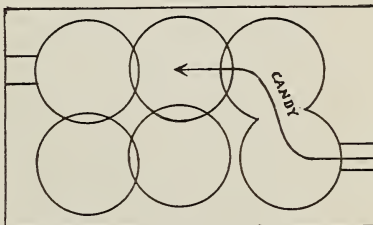
The poplars, or tulip, gave a good flow over the middle and northern portion of its region; but it was very light over the southern portion. The prospects for the flows which are still to come are good.

Cordele, Ga.

J. J. WILDER.

Too Little Room for Candy in the Queen-cages

I notice very little said of the new queen-cage of late. I think many queens are lost by the candy being eaten out too soon. Many times the candy may be half eaten out by the bees when queens are received. If the old cages are to be used I think it might be well to make them as indicated by the



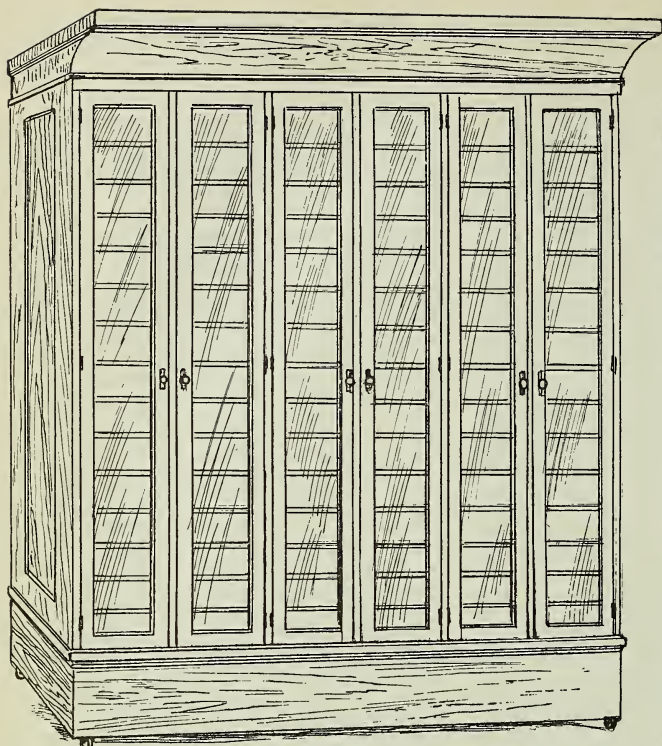
enclosed drawings of the different cages, and then use a comb instead of cardboard.

Worthington, W. Va., Dec. 15. L. H. ROBEY.

[The only objections to your scheme of providing more room for candy is the increased weight, and, of course, increased postage. There are two standard sizes of queen-cages. The smaller size is just as large as it can be and still come under the weight for one-cent postage. In the same way, the larger cage is just large enough so that it will go for two cents. Of course, we might redesign the cages, and provide more candy room, and thus use less space for the bees and queen. This, we believe, would be a mistake. The longer the distance a queen has to travel in the mails, the more attendants she should have. But for export cages, the larger size will contain 50 to 60 bees, while the smaller size, for domestic use only, and for short distances, will accommodate 10 bees besides the queen. Taking every thing into consideration, it is our opinion that a piece of pasteboard, so placed over the candy that the bees have to gnaw it for 24 hours to get it away will practically secure the same results as the holes of candy.—ED.]

A Loud Warning to Beekeepers

Mr. Root:—Perhaps you can remember giving a careful warning, well worded and thoughtful, about looking well to harness and wagons. I was proud of your comments at the time; but although I had my harness and rig all right, we never use brakes here; and in coming down hill with a heavy load of



A Dust-proof Showcase for Honey in Shallow Frames

We have a large walnut showcase, formerly used for something else, that now stands in the grocery to hold shallow frames of honey. With its six glass doors it will accommodate 225 frames in each division, 15 deep on each shelf, so 1350 are provided for, and, at 4 pounds each, 5000 pounds can be put away safely, and thus protected against moth and dust. A little sulphur will protect a great many combs, empty or full—5% depth is shown. This case is an object lesson to beginners, and traveling men say that nothing approaching it in size of display have they seen in their travels.

We keep the front attractive, and store surplus combs at the back. It sells honey on sight, and some buy 4 who came for only a section. There was only one year when the crop more than filled it.

BEES HIVED FROM A SKYLIGHT

After unpacking supers of honey in the back room of the store, four miles from the apiary, we had a collection of homeless bees from 60 hives (more or less) that accumulated on an overhead skylight. Rather than lose them a hive with a division in the center, filled with combs of honey, was prepared, the bees were taken down and divided into two lots, and a spare queen given to each. This hive was set a foot from a window, having a hole in the glass, with a stick running up to the hive. The bees climb the same path, and divide to their respective sides, and are now as lively as any bees.

W. W. VICKERY.

honey my harness breeching gave way, the load striking the horse, which got away. In falling under part of the load, I got my back partly broken. This was the last part of August, and I have never stooped or lifted since, and never will, likely. After 35 years of steady beekeeping and working up a honey market, and a home trade which will take 10,000 lbs. of honey from our house, I am forced to give up. My honey trade and good will are worth \$1000 cash, for which I shall never get a cent. My conscience has dogged me every week since I got hurt, to warn others. Every wagon used for bees or honey should have *brakes* on. I have never yet put a pound of honey on the market nor advertised or sold on commission. My trade is never filled.

CHARLES MITCHELL.

Molesworth, Ont., Canada, June 10.

Space Above and Below in the Shipment of Bees

We note your instructions in June 1st issue of GLEANINGS for shipping bees, which are good so far as they go; but I think that full colonies ought to have 1½-inch space underneath bottom-bars, and 2 inches above the brood-frames for clustering, and something across the top to prevent piling up, so as to shut off the air. No old field bees nor bees having the swarming fever ought to be nailed up. We recently received a bunch from the South practically all dead; not a good frame of brood in the bunch; enough bees for perhaps two nuclei. Express charges were \$30.75. The whole thing can be considered a total loss. I believe a comb of water ought to be added.

Bellevue, O., June 5.

H. G. QUIRIN.

[Your suggestions to have a space above the bees and below them are entirely in order, and we may say that in both carloads of bees that we shipped from the South to the North we had such space. There was also protection above the top of the screen. We thank you for calling attention to this matter, as it is very important to have these precautions observed.—Ed.]

with a stick running up to the hive. The bees climb the same path, and divide to their respective sides, and are now as lively as any bees.

Evansville, Ind.

Number of Bees in Nuclei

Gentlemen:—Please send me the following information: What is the weight of and number of bees in a one-frame and also a three-frame nucleus? In a pound package of bees how many are there, measured in bulk?

T. J. JACKSON.

El Dorado Springs, Mo., May 6.

[A one-frame nucleus contains about one-third of a pound of bees and about two-thirds of a frame of brood. A three-frame nucleus contains a little over a pound of bees and three frames of brood partly filled. The number of bees and amount of brood will vary. Sometimes there will be more brood in proportion to the number of bees, and other times more bees in proportion to the brood. A pound of bees will approximate about 4500, which would a little more than fill a quart measure.—Ed.]

Hybrids Stood the Cold Weather Better than the Italians

Out of 210 colonies in ten-frame double-walled hives in Fairfield and Litchfield counties, I lost through the winter and spring 20. Of these, 16 were Italian, of which 6 were from Miller, in Pennsylvania; 6 from Doolittle; and 11 from George E. Hilton. I lost every one of the Italian colonies before March 1, on full combs of honey. They were frozen to death or killed by dysentery. We had three months of zero weather, with no cleansing flights.

Out of the 194 hybrids (half black) I lost 4 from starvation through April. The Italian colonies were in the same row as the hybrids.

Danbury, Ct., May 23. JOHN NICKERSON.

[Were the Italians goldens or leather-colored?—Ed.]

Our Homes

A. I. ROOT

I am come that they might have life, and that they might have it more abundantly.—JOHN 10:10.

They that wait upon the Lord shall renew their strength; they shall mount up with wings as eagles; they shall run, and not be weary; and they shall walk, and not faint.—ISA. 40:31.

Cast me not off in the time of old age; forsake me not when my strength faileth.—PSALM 71:9.

I am starting out, as I have told you several times, to try to live to be a hundred years old. How can I manage it? What shall I do, and what shall I cease doing? Mrs. Root said she had very little desire to be a hundred years old; but when some of the children reminded her that she could probably aid in prolonging my life better than any one else in the world, she added, "With that view of the case I would try hard to live to a good old age."* You see she takes an unselfish view of the matter. Well, friends, I too am trying to take an unselfish view of the matter. I not only want to live to see what is going on in the years to come, but I want *others* to live to a good old age. Mrs. Root has often reminded me that people who live to be up to ninety years or more are usually not only a burden to themselves but oftentimes they seem to be, at least in some respects, a burden on the rest of the world. Now, I think this need not be so. Our good friend Terry insists quite vehemently that it need not be. He too is trying to come up to the hundred mark; and he and I both have been for years trying to teach humanity how to "keep well and live long." One reason why I want to live as long as God's will is that I should live, is that I may see what is being accomplished in this line by our good men and women of this twentieth century.†

May God be praised for the assistance our Department of Agriculture is giving. In my hands are some recent bulletins sent

* Mrs. Root not only knows better than anybody else in the world what sort of food agrees with me best, but she knows better how to prepare it. She is also prompting me more or less every day of my life in regard to health measures. Wherever we are she makes provision for my naps before dinner, and exhorts me every little while to straighten up, throw back my shoulders, and expand my lungs. I hardly need remind you that she is almost fierce in this matter of pure air and abundant ventilation. Very likely I should not be alive and dictating these Home papers at this moment were it not for my untiring and indefatigable helpmate.

† I not only want to see what is going to be done in regard to sanitation, pure food, fresh air, etc., but I want to see the outcome of wireless telegraphy, flying-machines, electricity, and radium. By the way, my radium "still radiates." The little specimen I have, although it has for years been pouring forth a literal "bombardment of shooting stars," is at it still, winter and summer, week days and Sunday. I also want to see those "that wait upon the Lord" "inherit the earth."

out by the Department. The titles are as follows: "How to Prevent Typhoid Fever;" "Tuberculosis;" "Facts about Malaria;" "Remedies against Mosquitoes;" "House-flies;" "Harmfulness of Headache Mixtures;" "Poisonous Mushrooms," etc. These bulletins have all been sent out within the past year or two. There is just one more—"Habit-forming Agents—Their Sale and Use a Menace to the Public Welfare." A lady who gave an open-air address on our public square spoke about the recent legislation or ordinances against impure or deleterious milk. She said the number of babies that lost their lives in Cleveland, every summer, through the use of milk not fit for use was *greater* than the number of people lost on the Titanic. May God be praised for what has been done to save the *babies*; and I hardly need tell you that the mothers of these same babies have had much to do in securing this very just and wise legislation. This pamphlet about habit-forming agents informs us that the babies, through the agency of ignorant mothers, get an appetite for stimulants in soothing syrups, for instance, and things along that line. Later on, different things are put on the market, just to get the pennies from children so young that we might almost call them babies. The climax of this terrible work (just for the sake of the nickels and pennies) is the cigarette business. In the last number of that periodical called *Good Health* we find the following:

Not fewer than 10,000 persons die annually of chronic poisoning with alcohol and tobacco—*six times* as many as went down with the Titanic.

Well, this government bulletin on habit-forming agents does not *mention* cigarettes, scarcely mentions tobacco, and has not a word to say about beer and other *intoxicating* drinks, although it does have considerable to say in regard to opium, morphine, etc. As a rule it rejoices my heart when I get hold of these government bulletins, especially the reports from our experiment stations. By the way, our Ohio Experiment Station at Wooster is said to be doing a greater work, or at least a *better* work, than perhaps any other similar institution in any of the States. May God be praised for this. I have, however, a report in my hand just now from our Wooster station that did *not* "rejoice my heart" when I saw it. It is entitled "Tobacco Culture in Ohio." I asked the question recently through our journal if the people of Ohio generally

felt that it was a wise thing to do to have our Experiment Station teach our Ohio boys "how to grow tobacco." I am glad to know that at least a few of the professors at our Wooster station are not in favor of experiments in growing tobacco, and, as a consequence, it is not grown on the grounds at Wooster, but at a sub-station in the southern part of Ohio. In a communication from the director of our station, just received, he said something like this: "Mr. Root, while the men of Ohio, two out of three, if not four out of five, are tobacco-users, what else can we expect than that tobacco culture will be taught?"

Now, friends, I think you can get a glimpse of the reason why I have been for long years praying that the mothers of Ohio might speedily have a chance to vote on questions where they are more deeply interested, and where their judgment is better and wiser than that of the *fathers* of our land, as a rule. A very young boy was recently found smoking cigarettes; but when a good lady remonstrated he replied, "My pa smokes too;" and as long as his pa continued to smoke a cigar, it would be hard to persuade the young urchin that it is not the thing to do. Our Department of Agriculture has been sending out bulletins in regard to the different kinds of food. One recently in my hands was in regard to "Fish, Its Healthfulness, etc." Now, why shouldn't we have a bulletin reading something like this? "Beer and Similar Intoxicating Drinks; Their Effects on the Health and Morals at Large?" Then Uncle Sam might give us another bulletin: "Tobacco—Its Probable Effect, Physical, Mental, and Moral, on the People of the Land."* Why do we not have such bulletins? Because the Great American Tobacco Company would not like it. They have got somebody stationed near the head of our government who is continually opposing any "fanatical" attempt along this line; and it is the same way with the rum traffic. Not one mentioned for the presidency has dared to say a word about this. Please notice I use the word "dared," for not one has even so much as dared to mention the drink traffic. Have you ever found in the voluminous "Presidential messages" any mention, rec-

ognition, or reference, to this "Great Destroyer"? If the women had a chance to vote, do you think this would continue? Surely not. May God be praised for the good and wise women who would save us from a multitude of ills and disasters if they were only permitted to have a chance. I am now hoping and praying that that time will soon come. Perhaps the dawn is just now before us, when we may see a President who fears God but does not fear the rum power—who will not hesitate about attacking what Hobson called "the great destroyer," in his bold speech in Congress.

Now just a word in closing, in regard to our texts. Obedience to God's commands will not only give us as a nation and as a people longer life, but it will give us the ability to enjoy life; to be more *alive*, and to have life "more abundantly," as expressed in our text. The *Scientific American* is not a religious paper. Sometimes I have thought when they were discussing every thing pertaining to human life and health, and yet carefully avoided any mention or allusion to the rum traffic, that they were quite a good way off from temperance and Christianity—that is, one phase of Christianity. Yet I was pleased to note their answer in their question department where a subscriber asked, "Where is the healthiest place on earth?" Let me explain that the *Scientific American* has been for 60 years, to my knowledge, answering all sorts of questions. No matter how ridiculous, the questioner gets some sort of answer; and in order to save time and space, some of the answers are very brief, and sometimes one might think rather abrupt. Well, they replied to the good brother who wanted to know where the healthiest place on earth is, something like this: "The healthiest place to live is where there are the most churches and church-going people."

The good brother was vexed at such a turn of affairs, and asked in the next issue if the querist editor was such an ass as to believe that the churches had any thing to do with physical health. The *Scientific American* came back at him by replying that people who observe God's laws would, as a rule, keep the laws of man; and that law-abiding citizens are, as a rule, a healthier lot of people than those who trample law under foot.

The last of our texts has been to me a comfort, especially as I was approaching old age. Physical strength, energy, and enthusiasm, are great blessings; and when they come to me, as they have been coming for the last few months, I praise God for them more than for almost any thing else.

* Not many years ago one of our Medina citizens, a man highly esteemed, got up in prayer-meeting, and confessed that he had been going blind; but when he cut off his tobacco his blindness disappeared. He broke off, and then commenced its use again, until he decided beyond question that the use of tobacco, and that alone, was making him blind, and nothing else; and yet that bulletin of toward a hundred pages, from our Ohio Experiment Station, has not a single sentence that even touches on the matter that the influence of tobacco-using has on the health.

A few days ago I was in a hurry, as I wanted to catch somebody before he got out of sight. I started off on a run, a good deal as I used to do when a boy. I caught my man, delivered my message, and commenced to walk back deliberately. Some old farmer on a wagon (I do not know who he was) said, "Mr. Root, it rejoices my heart to see you able, at your age, to start up like that and run like a boy." I told him it rejoiced my heart too, every day, and I was thanking God for it; and I hope that the beautiful text may induce a lot of my old friends to have more faith in Bible promises, to strive harder to obey God's laws, and to hold on to physical strength as long as possible. We must not let the idea get hold of us that we are getting past usefulness. Good sense, aside from Bible teaching, should prompt us to eat sparingly and to be sure to take plenty of physical exercise in the open air every day of our lives, whether we feel like it or not. The old saying,

Satan finds some mischief still
For idle hands to do,

will apply right here to elderly people who are liable to get the idea that they are too old to do some useful work, or that they do not *need* to work any longer, etc. That beautiful promise, that we shall "run and not be weary, and walk, and not faint," is not to people who sit still and do nothing, even if they *are* growing old.

SUNDAY EXCURSIONS, ETC.

I presume the great wide world, or at least a great part of it, will continue to laugh and make fun of me because I persist in believing that God's wrath falls on those who forget to "remember the sabbath day to keep it holy." During a Sunday excursion at Buffalo, on June 23, so many people piled on a wharf where the steamer stopped that the whole structure went down in twelve feet of water. I want to give you a newspaper heading clipped from the *Cleveland Plain Dealer*:

BELIEVE 40 DEAD IN NIAGARA CRASH; SEARCHERS
RECOVER SEVENTEEN BODIES WHERE DOCK
COLLAPSED; PARK EMPLOYEES REFUSE TO
AID RESCUERS, AND DRUNKEN MEN
HINDER.

Now read the following paragraph:

EMPLOYEES REFUSE TO AID.

There was considerable disorder at Eagle Park after the accident. Employees of the place refused to lend any aid to Dr. Stocker, the deputy medical examiner, in his efforts to recover bodies, and his investigations were hampered by drunken men. No representative of the sheriff appeared, and Dr. Stocker finally ordered all the bodies sent to Buffalo as rapidly as they were recovered.

From the above it would seem that the physician, when he arrived, was hampered

by the drunken crowds—too drunk to care whether anybody lived or died. A list of those who lost their lives is significant from the fact that about nine out of ten of them were women. It has been frequently commented on that the women far outnumber the men in most of our churches; but may God forbid that the women shall outnumber the men in *Sunday excursions*. Perhaps one explanation of this state of affairs is that, unlike the Titanic tragedy, the men here took care of themselves, and let the women struggle and die.

By the way, there are just now several reports of women being drowned because the new-fashioned hobble skirt would not permit them to make a rational effort to save themselves. In fact, a young woman who was an expert swimmer has just lost her life in our nearby Chippewa Lake because she was so hampered by her modern skirt which prevented her from using her limbs at all. Of course, as a rational reason for the loss of life on this and every other Sunday catastrophe, the crowd who had no regard for the sabbath was composed largely of a class like those described in the clipping; and it is a risky thing for both life and limb (to say nothing of morals) to be found in such a crowd.

If you think I am "superstitious" in insisting that more accidents happen on Sunday than on week days, read the following, clipped from the *Cleveland Plain Dealer* of July 2:

Judging by the number of fatal accidents that occur on the first day of the week, a safe and sane Sunday is strongly demanded.

This is not the first time the *Plain Dealer* has uttered similar sentiments, especially after a long list of accidents and fatalities *Sunday after Sunday*.

Later.—Since the above was taken from the daily papers, I learn from a periodical published near the scene of the accident that the number of lives lost was about 40, many of them having been swept by the rapid current over the falls before there was a chance for rescue.

SHALL WE PUT TO DEATH THE INTOXICATED
MAN WHO COMMITS MURDER, AND AL-
LOW THE MAN WHO SOLD HIM THE

DRINK TO GO SCOT FREE?

The following letter has presented the matter of capital punishment to me, at least, in a new light. Read it:

Vengeance is mine; I will repay, saith the Lord.
—ROMANS 12:19.

A. I. Root:—Referring to the article in *GLEANNINGS*, page 119, I doubt not that the paramount object of our lives is that we may so live as to become promoters of the Redeemer's kingdom among men, and that we alike deplore the depravity and unre-

generate state of very many of our countrymen. That good, industrious, and useful citizens must and do fall at the hands of lawless and wicked men brings a deep and heartfelt lamentation, not only from each of us, as of one man, but also from every law-abiding and peace-loving citizen our country over. Again, we are as one in our belief that, behind this and almost every other form of vice, crime, and misery, stands that monster of evil, the American saloon—the blight of our nation and parent of nine-tenths of the poverty, wretchedness, and woe that pervade so many hearts and homes. Of the truth of this I am fully persuaded; yet from the introduction of the article from the *Chicago Advance* there is room for the inference that we as Christian believers have been somewhat differently impressed by parts of the New Testament teachings. Now listen: The people of this great nation tolerate laws which license a certain class to dispense to our sons—the young men of our fair land who ought to be the pride of our homes—this poison which debauches, debases, and ruins both the bodies and the souls of these children of fair promise. Now, as this infamous business progresses toward its culmination, where every passion has been inflamed to its utmost; when some heart-rending blood-chilling deed has been perpetrated, then it is that this same people again assert themselves with another law; and in effect they say, "Now hand over to us this poor unfortunate culprit who fell under this snare of his soul's enemy; we will cap the climax by taking away his life, and dropping him out of time—consigning his poor sin-laden soul, not to the fellowship of the saints but to an inheritance among those of whom it is declared they have no part in the kingdom of heaven." Now, what have we accomplished? We have not restored to the bosom of his family the one so brutally murdered. We have conferred no dowry on the widow and her children, nor have we in any degree mitigated their sorrows; but we have made an exhibition of a spirit, not of him who, in the agonizing hour, prayed, "Father, forgive them, they know not what they do," and who said, "If they brother trespass against thee, rebuke him" (not kill him); "and if he repent,

forgive him." May you and I, dear friend, stand as with our armor on, contending for the right; may we, under the divine blessing, be made instrumental in hastening the coming of that time when "the knowledge of the Lord shall fill the earth as the waters cover the sea." But let us not assume that prerogative which belongs to God alone. No, brother, we who "can not make one hair white or black" may not take away the life we can not restore. We will "rebuke" them, not kill them. But detain them in solitude and servitude till that time when infinite goodness shall sever the tender thread and consign to such place as unalterable wisdom shall decree. Then will our hands be clear of the blood of all men; time will have been given for repentance and forgiveness, if such be yet possible.

Much might be said regarding the evils resulting from executions; but such is not the purpose at this time. Suffice it to say, men whose passions have been so inflamed pay little heed to the punishment that may follow, and perhaps it may be more the certainty of its infliction than its character that deters.

Barnesville, O.

THOMAS DEWEES.

I confess the above has given me a new suggestion. On the impulse of the moment I would say no. Do not put to death any more men who commit murder under the influence of drink; but if anybody is to be electrocuted, let it be the man who *sold* the drink. I have asked the question whether there are fewer or more murders where capital punishment has been abolished in the different States of the Union; but I have not yet seen a conclusive answer. I wish to thank our good brother for his able letter that, without question, was inspired by the spirit of the Master.

Poultry Department

NATURAL-HEN INCUBATORS; HOW TO GET GOOD-SIZED DUCK EGGS, ETC.

My Dear Mr. Root:—In GLEANINGS for June 15 I find the poultry department unusually valuable, not because of the quantity of the matter you use, but the quality of it. That ancient but profitable fraud, the "natural-hen" incubator is treated in exactly the right manner. I wrote an article at least twenty years ago describing exactly the same thing, and I got my plans from some one I had seen in my travels, I now forget where. If there is any patent on such arrangement it is on some insignificant detail that adds nothing to the effectiveness of it.

The longer I keep Indian Runner ducks the better I like them. Have you noticed that they are about the most intelligent of all our fowls? Mine are allowed to run at will, during the time they are out of their yard, in the irrigating ditches on the ranch. They frequently go to the further limits of the place; but at any time in the day if I go out and call them, and they hear me, the ducks answer; and in a few minutes they come as fast as they can for the house. I invariably give them something to eat when they get home. At night they always come up; and when I go out to the yards they stand around and "talk" to me and follow at my heels until I give them their regular night feed. They go into their yard and stay there contentedly until they are released the next day. They are ravenous eaters when confined; but when they have the run of the ditches they do not eat overmuch. Mine prefer a mixture of bran and shorts with beef scrap added. I can stop them from laying in a week by cutting down their feed and reducing the size of their eggs by underfeeding. So far as hatching in an incubator is concerned, I will say that I have just had a hatch come off that satisfied me very well. I had 62 eggs in the incubator, and every egg but three start-

ed to hatch. They went along all right until a week before they were due to hatch, when I filled the lamp, turned the flame up rather high, and *forgot it!* I also forgot to close the cellar door which opens to the east, and the morning sun shone directly in on the incubator. I went out to see about a field that was being irrigated, got busy with a flood of water, and never once thought of the incubator until noon. Then I found the temperature 110 degrees, and said to myself those ducks were cooked, sure. However, I did not give them up, but let the machine run its course. The ducks began hatching the 26th day, and by the end of the 27th I had 36 ducklings, 34 of which were all right. One was a cripple, and I killed it; and the other was weak, and died before a day old. The others are in fine condition now. I examined the eggs that did not hatch, and found three infertile and the remainder with ducks dead in the shell, apparently having died about the time I ran the temperature up on them. As a rule my poultry gets my first attention; but when an irrigating ditch breaks, the results may be serious if the break is not attended to at once. I have very good reasons for believing that a good incubator, supplied with an abundance of moisture from the beginning, will beat a hen or duck as a duck-hatcher.

The cause of blood-streaked eggs is usually over-fatness, which weakens the blood-vessels of the ovaries, and they break, exuding a drop or two of blood which follows the yolk down the egg-passage, and becomes incorporated with the white as it is formed. The "bloody piles" described is prolapsus, caused by weakness in the muscles on the egg-passage. Hens in which this condition appears should be killed.

Peotone, Ill., June 22.

MILLER PURVIS.

We are very glad indeed to get the above indorsement, both on the incubator and the

way to get big duck eggs, etc. If a three or four pound duck is going to produce a good-sized egg every day, and, in extreme cases, *two* in a day, good common sense teaches that she must have an abundance of the very best and most nutritious food; and I for one can not see why ducks during the night may not have easy access to all the corn they can consume. To head off the rats and other animals, put their supplies of corn under water each night as they are shut up. Where they have the run of a stream of water, as ours do, the beef scrap is not needed, and the bran and shorts ration can not well be given liberally without danger of rats. Besides, there is no better egg and meat than "corn-fed" eggs or meat. I am glad to have friend Purvis tell us something about his mishaps as well as his successes. His closing sentence indicates there are two kinds of blood-streaked eggs—blood on the inside of the egg, and blood streaks on the shell. The latter can be washed off, but it is some trouble.

BLOOD-STAINED EGGS, ETC.

Mr. Root:—C. F. Childs, in your last number, page 392, speaking of blood-stained eggs, asks for a remedy. A while back, when I had quite a few hens, I had the same trouble, and talked with a poultryman about it. I followed his advice, and in a week or so had no more trouble. Like Mr. Root I can not say whether this would be considered "according to Hoyle."

In the drinking water I put old nails, or, rather, in another dish, and mixed the water I gave them with this iron solution. Tincture of iron probably would be as good or perhaps better. The iron rust has a tendency to strengthen the egg receptacle, and generally giving tone to all the hens in other ways—at least no harm can be done, and it is a good tonic for man or beast. I like a little of it myself.

Cleveland, O.

R. V. MURRAY.

As all of our poultry-yards in Florida are supplied with water through common iron pipes, I can hardly think there is any lack of iron. In fact, when the water comes through the iron pipes, drop by drop, a sort of iron rust accumulates more or less in the drinking-vessels. I notice by some of the poultry journals that mention is made of blood streaks *inside* of the egg. I have never had any thing of the sort. It is blood streaked on the outside that we have been considering, if I am correct.

FLORIDA IN THE SUMMER TIME, ETC.; THE INDIAN RUNNER DUCKS UP TO DATE.

Mr. A. I. Root:—The ducks are doing finely, except one, which was injured by a dog about ten days ago. When I got to the yard where the 26 should have been, about 8 in the morning, I found only two there. I went down to the lower gate and found a dog in the creek after the ducks. The dog was with Mr. R. Knight's cattle, which he was in the habit of following. I went around by the bridge and drove him and the cattle away, and sent Herbert to see Mr. Knight, who promised to take care of the dog; but I am afraid the duck will die. I have caught quite a number of late, and one skunk. The day before the skunk finished up those little chicks I tried to find a trap, but failed. After the

chicks were all dead I found a trap in your tool-house, and set it in the coop with the dead chicks. About nine o'clock that night the whole neighborhood knew that a skunk was in trouble. Raymond put him out of his misery with a charge of shot next morning. Since you left, the three old ducks have laid in 52 days 114 eggs, and one of the 11 young ones began to lay May 22, and has laid four to eight eggs a week since, about the size of a small hen's egg.

The ducks have not been out in the stream for a week, on account of the heavy rain that has converted the stream into a raging torrent. A week ago the ducks would not try to cross the water to get into their yards, so Reginald had to get into the water and drive them up two or three rods above, and then rush them into the water. After several failures he succeeded in getting them all across. The next day the water was nearly knee deep on the bank, and washed over the fences, crowding them over so that there was danger of the ducks being washed off into the torrent. I tied the fences with cord to the opposite side, and have kept them all in so far. There is no danger of their going into the flood willingly. They are afraid of it.

The rain began on the first, and continued until the 11th, most of the time very heavy. Sixteen inches fell in that time. The ducks now get nothing from the water, so I do not expect them to lay many eggs until they can get out again. I was afraid the fiddlers would be carried away by the torrent, but the other day, at low tide, I saw a little bank o. sand, a few square feet, covered by thousands of them.

That old duck of yours wanted to sit about three weeks ago, and when Reginald turned the door of her box to the fence she sat on the sand, so we turned her into the water and shut her out, two days, and she gave up and began to lay again in ten days. People who have lived here 30 years say they never saw such a rain before. As a result of the unusual rain fall, the bridge is a wreck, and the road between here and Manistee Ave. is impassible, so teams have to be driven west to Sarasota Ave., and then north to Manatee. But we are to have a steel bridge soon.

C. A. MORGAN.

Later, June 19.—The duck recovered. The old ones are laying about the same; young one also; four to-day; weather fine ever since our 22-inch rain.

C. A. MORGAN.

Bradentown, Fla., June 12.

THE FLORIDA EVERGLADES; A BRIEF REPORT FROM A VISITOR THERE.

Mr. A. I. Root:—On the occasion of my visit to Bradentown in March you expressed a desire to know what I thought of the Everglades after seeing them. Last month my friend Mr. Everett and myself made a trip across the State in a small launch. We were 16 days on the trip.

Leaving here May 8 we ascended the Caloosahatchee River to Lake Hicopchee, then across it through three miles by canal, across Lake Okeechobee, to the hotel at the mouth of the south (Miami) canal. We had had an accident, breaking our propeller shaft. The only place to get any repairs was at a dredge, so we went 16 miles down the south canal to the dredge Hicopchee. However, this gave us a chance to see the country.

The soil is deep muck, pure black. We stopped at Mr. Bryant's place, five miles out. He had several kinds of vegetables growing—beans, sweet potatoes, and strawberries. But his sugarcane seemed to make the most remarkable growth. No fertilizer was used.

At the Callahan place, on the south shore of the lake, quite extensive experiments have been made. He had a nursery of grape fruit and orange trees, bananas, vegetables, red clover, alfalfa, rhodes grass, etc. They looked healthy and thrifty.

It is 64 miles from the lake to Fort Lauderdale. For perhaps half a mile from the lake the custard apple thrives. Beyond this, for perhaps 30 miles, one can see nothing but sawgrass. Of course, it appears absolutely level. Two dredges and the drill boat are working above the dam, and a suction dredge below. The dam is 28 miles from Ft. Lauderdale.

The glades are being cultivated along the canals about 6 miles out on the north, and 14 miles on the south canal.

The colony at Zona, on the South Lauderdale canal, appears prosperous. They have a canning fac-

tory to care for surplus fruit. Large quantities of beans, tomatoes, potatoes, and celery were shipped this season.

We were up the Miami canal several miles. There is not much doing there yet.

And now for my conclusions. The land is rich.

It will be drained. It will require fertilizer for best results for some crops, because deficient in certain elements. Its drainage is a big job, and will require some time yet. It is not all surveyed. The water is healthful for drinking, but tastes a little of the soil.

Olga, Fla., June 21.

WM. SNYDER.

Temperance

OUR CHURCHES AND THE LIQUOR TRAFFIC.

I have already had something to say about the efforts of the Baptist Brotherhood of Cleveland (God bless them) in their efforts to have law enforced in regard to having saloons closed on Sunday. I am glad to know that the Congregational Brotherhood not only endorses the Baptist movement but are doing something themselves along that line. See the following:

"We are in the fight against saloons keeping open on Sunday to stay," said W. H. Whitney, president of the Congregational Brotherhood, in an address last night at the East Madison Avenue Congregational Church.

A civic committee composed of members from brotherhoods of different denominations is prosecuting violators of the Sunday-closing law.

"Obedience to the law must prevail in Cleveland," said Whitney. "The city won't help us. People must realize that law is more important than success in any political party. The laymen must help in the work, and not leave it all to the ministers."

And finally I said, "May God be praised" when I saw the following heading in the Cleveland Press for May 3:

PRESIDENT IS ASSAILED BY METHODISTS; GENERAL CONFERENCE DENOUNCES TAFT BECAUSE HE DID NOT PREVENT WILSON'S ACTING AS BREWERS' CHAIRMAN.

May the Lord also be praised for the following resolutions which, we are told, were adopted amid cheers:

Whereas the President of the United States, the Secretary of Agriculture, and the Secretary of State, his authorized representatives, were petitioned by the millions of Christian people of the nation, individually and through their respective representatives, to desist from all national indorsement of said brewers' congress, and that the Secretary of Agriculture decline said position of honorary chairman because of the indorsement such position would give to the business represented, and the evident purpose in view by said meeting, viz., to increase and extend the sales of beer and thus encourage the increase of drunkenness; and

Whereas the said United States authorities utterly disregarded the expressed wish and prayer of the Christian manhood and womanhood of the nation, with the exception that the Secretary of Agriculture sent out in reply a most frivolous, fallacious, and stereotyped excuse; and

Whereas the reply is an insult to the intelligence of Christian people, inasmuch as the writer must have known that the sole and only purpose said congress had in view was to secure the seal and approval of the United States authorities to their part in the beverage-liquor traffic, which is the greatest curse and blight to the nation;

Therefore, be it resolved by the general conference of the Methodist Episcopal Church, in conference assembled, that, while we pledge ourselves to remain loyal citizens of the United States, and to support those in authority in every laudable, lawful, and legal way, we do hereby announce as our conviction that in so aiding the beverage-liquor traffic by their persistent endorsement of the said brewers' congress in the face of our most earnest protest, those in authority have forfeited all claim and future franchise of the Christian and sober manhood of the nation.

God grant that every other Christian denomination may unite with the Methodists and indorse the resolutions as above.

"PREVENTION BETTER THAN CURE."

I have had considerable to say on this subject of late; but the following, clipped from the *American Issue*, pointedly directs our attention to a fearful thing that is going on and on in our United States of America, and for that matter, more or less, in the whole wide world. Read it and see if you do not agree.

VOICE OF THE LAND. WHY NOT REMOVE THE CAUSE?

New York is spending hundreds of thousands of dollars for a sanitarium for inebriates. Agitation is on for similar institutions in Pennsylvania and other States. At the same time, commonwealths are spending vast sums in reform farms, penitentiaries, and other penal institutions. But why not prevent crime instead of punishing it? Why not devote time, money, and energy to keep the youth from becoming criminals rather than in taking care of them after they become criminals? Why not remove the cause rather than continue to burden taxpayers with the effect? Why not grow good citizens instead of bad ones?

Now, the saddest part of the above is that not one of the candidates for the presidency of the United States—that is, one with any prospect of election—dares open his mouth in regard to recommending prevention as being better than cure. In other words, we have not had a president's message for many a year, if I am correct, where he even touched upon the question as to whether the *prince of all evils*, that afflicts all nations, shall continue his reign or not. I am watching and praying for the time to come speedily when all good men and women will rise up in their might and demand a president who fears God, but does not fear the liquor power.

LAW ENFORCEMENT WHERE IT STRIKES THE LIQUOR DEALERS.

I clip the following from the *Cleveland Plain Dealer*:

Another obstacle in their campaign against the saloons of Cleveland yesterday afternoon when Chief Prosecutor McKay, of municipal court, flatly refused to issue warrants against two saloonkeepers who, the Baptists said, had violated the Sunday closing law.

Attorney John A. Chamberlain, of the brotherhood, applied for the warrants. He presented affidavits purporting to show that the two saloons in question had been open on Sunday.

In refusing issue McKay told Chamberlain that, if every request for a warrant was granted, half the

population of Cleveland would be in jail most of the time.

The "chief prosecutor" says, in other words, if a warrant was granted for every trifling(?) offense, like *keeping a saloon open all day Sunday*, "half the population of Cleveland would be in jail most of the time." I think I recognize Roosevelt's good qualities, and I believe he is strong on "law enforcement;" but when I vote for a President again, God helping me, I will try to vote for a man who has the courage to insist on law enforcement, even when it runs up against the brewers and distillers with their millions. May God bless, guide, and sustain the Baptist Brotherhood, and may all other denominations fall in line, and back them up.

THE RISE AND FALL OF NATIONS.

On page 64, Jan. 15, I asked the question, "Why can we not have Hobson for President?" Now to-day a printed speech delivered by him in the House of Representatives, Feb. 2, has just been put into my hands. The speech occupies 16 pages. From the first page I quote as follows:

ALCOHOL IN HISTORY.

History is a record of a sad procession of world tragedies. Nations and empires in turn have risen to greatness only to fall. Before the deathblow was struck from without, the evidence shows in every case the ravages of a titanic destroyer within, under whose operations the vitality and strength of the nation were submerged in a general degeneracy.

For centuries the world's philosophers and historians have looked on appalled, overwhelmed. Only in the last few years has science taken up the question. Following her patient, rigid methods, under which nature and life have slowly yielded up their secrets, science has at last cleared up the mystery and identified the great destroyer as alcoholic poisoning.

If you think the above is extreme, read the pages that follow. Now let me quote another extract from the last page:

THE SPIRIT OF THE MEN.

The enemy by ruse attempts to shake the spirits of our forces by saying, "Prohibition does not prohibit." Let us not only show up how it does already prohibit to a marked degree, but let us realize that getting prohibition is but part of our war. The second part is its enforcement. Let us turn the whole power of our organization throughout prohibition territory into such complete enforcement that all the world must see. Shrewd word is also passed along our ranks, especially to the worrying, that "Prohibition can not prohibit." Let us fling this back in the teeth of the enemy. It is nothing less than a boast that the nation is already lost. Let us put it before our ranks as the cry of pirates who have boarded the ship of state, and with jeers are trying to hoist the black flag, with its skull and crossbones, above the Stars and Stripes.

Let me quote from the above. The oft-repeated expression, "Prohibition does not prohibit," is really, as Hobson says, "a boast that the nation is *already* lost." When you hear anybody say again that prohibition does not prohibit and prohibition *can* not prohibit, consider that this means virtually to say that our just and righteous laws can not be enforced. That is what the mav-

or of Cleveland said in regard to shutting up the saloons there on Sunday. If that is true, our nation is already lost. And, dear friends, the responsibility rests on you and me to say that our just and righteous laws *shall* be enforced.

"RATTLESNAKES"—SHALL THEY BE TOLERATED IN OUR HOMES?

My daughter, who is a teacher in the public schools here, came to me and handed me a list price requesting me to send for the *Review of Reviews* for her. I looked up an advertisement I had seen, offering to send this and two others, *Success* and the *American*, I think it was, for about the price of the *Review*. I took all three. When they came I found two of the trio were carrying liquor advertising.

Now, Mr. Root, I should like to have you believe me when I tell you I had rather see a man offering rattlesnakes for sale than to offer liquor, as but few persons would be bitten by the snakes, as they understand the deadly character of such reptiles; but as to the "snake of the still," alas! there are too many who are deceived thereby.

Can not GLEANINGS give us a black list of all magazines and farm papers that carry these whisky advertisements, so that the unwary, like myself, need not be trapped into subscribing to such papers? I do not even want them to come into my home. Possibly you would not like to make up and publish a black list. Well, you could make up a *white* list of those like GLEANINGS, *Practical Farmer*, etc., that set their faces against furthering the well-being of any periodical that will help the Devil in such work.

If you can not give us a long list at once, give us a small one, and add to it as you become better at once, but it would soon bring about a line-up posted. Send a copy of such list to other publications that you have reason to believe would be glad to publish it. This move would not amount to much at once, but it would soon bring about a line up that would soon compel every journal to show itself on one side of the fence or the other.

To put the matter plainly, there is now no means for a person in the country to ascertain the standing of any paper on the temperance question without investing blindly, and then getting something he would be ashamed to have a Christian person see in his home.

Ozark, Mo., Dec. 4.

S. S. LAWING.

TOBACCO-GROWING IN OHIO.

After what I said in regard to the above in our issue for June 15, I submitted the matter to my good friend the director of the Ohio Experiment Station. Below is his reply:

.. Mr. A. I. Root:—You can not be too emphatic in condemning the wastefulness of the tobacco habit; but the facts remain that at least two men out of three, probably four out of five, are users of tobacco, and that the production of tobacco is recognized by custom and by law as being as legitimate a branch of agriculture as the production of corn or wheat.

As long as this is the condition of public sentiment, an institution supported by the State, and conducted for the benefit of the agriculture of the State as a whole, can not refuse to consider the production of tobacco, merely on the ground of personal detestation of the use which is made of it.

CHAS. E. THORNE, Director.

Wooster, Ohio, June 18.

I think I have heard somebody say in times past that "facts are stubborn things;" and I suppose my good friend Thorne is right. But may God be praised that the number of good sound business men of established reputation, who do not use tobacco in any form whatever, is daily increas-

ing. Whatever may be said in the way of criticism, just now especially, in regard to Mr. Roosevelt, let us keep constantly in mind that he does not use tobacco in any way, and, as we are told, he probably never will. And even if what Professor Thorne says is true, as I look abroad and see what the churches, the Y. M. C. A., the Endeavor societies, the Salvation Army, etc., are doing for the youth, not only of our blessed land, but for the whole wide world, I fell like bursting forth in the words of that grand old hymn:

Hail to the brightness of Zion's glad morning;
Joy to the lands that in darkness have lain;
Hushed be the accents of sorrow and mourning—
Zion in triumph begins her glad reign.

Just here my stenographer suggests that the growing of poppies for the production of opium is not so far out of the way as an illustration. And yet "heathen China" has mown down her poppies, in spite of their "poppylarity," and has imposed a penalty for those who still persist in their cultivation that I hardly dare put in print.

TOBACCO CULTURE—SHALL IT BE TAUGHT BY OUR EXPERIMENT STATIONS TO THE YOUNG MEN OF OHIO?

After my remarks in regard to growing tobacco in Ohio, p. 390, June 15, were printed, I found the following in the *Practical Farmer*, written by our good and wise friend T. B. Terry:

Our telephone company has a board of five directors, besides secretary and treasurer. The capital employed is nearly \$30,000. Our national bank has a board of four local directors and two cashiers, and they have the care of about one quarter of a million of other people's money. Now please notice, my young friends: Every one of these officials, from presidents down, attends church. There is not one of them, so far as I know, who drinks any intoxicating liquor. There are not more than two or three, I am told, who use tobacco in any form. Although an officer in both institutions, I have never yet seen these men either smoke or chew. Would that I could give you a clear record on tobacco-using, instead of one slightly clouded. All this is told you so you can see what sort of men are called to positions of trust in our community. And you will find it is getting more and more this way the country over. Young men with sound healthy bodies and clear brains are in demand. The poisons from liquor, tobacco, and overmuch food, in a measure stupefy the brain of any man. He is not so clear-headed as he might be. A large army of young men will graduate from college or high school this year. Others, with less education, will be starting out for themselves. We earnestly beg of you all to start rightly. Don't touch any tobacco or liquor.

ENTERTAINING ANGELS UNAWARES, ETC.

Dear Mr. Root:—I have read GLEANINGS for 25 years, and found much spiritual food in it, especially in *Our Homes and Temperance*. But to-day, when reading page 63, I find a letter from Mr. Cohenour, that is very indigestible. I won't even swallow it. In behalf of the Scandinavian race I want to protest against it. I am one of the hundreds of

your Scandinavian readers, and I think there is not one of us, not even one in the whole Scandinavian race who deserves to be classed among Eskimos, Chinese, Hindoos, and Pecheras of South America, even if we do eat fish once in a while.

As a contrast to the "fish-eating Norwegians," Mr. Cohenour put up the Americans as a superior race, living on mixed food "like birds on bugs and worms until they are grown up." I want to say frankly, if the American in any way is a superior race (it is hardly proper to call them a race) their superiority consists in living on bugs—humbugs—and worms imported from China, Japan, Hindostan, and other countries.

As to the fish-eating people of Norway, I can inform Mr. Cohenour and other ignorant Yankees that the people in Norway do not eat more fish than people do in America, proportionally. The Norwegians are not afraid of getting wet and cold, and they may fish more than the Yankees; but most of their fish are shipped to England, America, and Germany.

I have lived in Norway 30 years and in America 39 years, so I know a little more about it than this shining jewel, Mr. Cohenour. As to mental strength, I think (and every educated American knows) that the Norwegians stand on a full level with any nationality; and as to physical strength you will find a greater number of centenarians in Scandinavia than you can find in America's ninety millions; and some of them would easily come out victorious in a tug-of-war with a 70-year old humbug-eating Yankee.

Yes, I have, in the last 25 years especially, seen hundreds of occasions similar to what this German boy, Mr. Bernhard Kunz, tells us on page 29. These superior Yankees have no use for the foreign worms, if they can't squeeze dollars out of them.

Please let us all try to live up to Paul's teaching in Rom. 12:3 and elsewhere.

Tacoma, Wash., Feb. 1.

E. O. TEFFRE.

My good friend T., I humbly beg pardon for allowing the expression you refer to to get into print. We should all remember that here in the United States, "the land of the free and the home of the brave," as we are wont to call it, we are made up of *all* nationalities. We have bright boys and men who came from *all* quarters of the earth; and we should all be careful about making use of any expression that will reflect on our neighbors. Friend Cohenour used the expression he did because he was a little vexed, as I take it, because I suggested that he, with a large family, might make ends meet by living on "boiled wheat." He resents this, and declares that neither a vegetarian diet nor a meat diet will produce great men of superior education. In speaking of fish, let us remember that the great Master, when he made his banquet for his beloved followers, gave them first a fish broiled on the coals; and after that, honey in the comb. In view of this, who can think of casting a slur on a nation, the inhabitants of which use a large quantity of fish as food? Our stenographer suggests that friend Cohenour does not refer to the Norwegians as we know them, but to the inhabitants of the northern part of Scandinavia who necessarily use a large quantity of fish. He contrasted the Hindoos as vegetarians with other nations who use meat almost exclusively, in order to prove that a mixed diet is better.